

COMPUTERWORLD

New decade, new identity for Lotus

Workgroup successes force tough choices

BY ROSEMARY HAMILTON
CW STAFF

CAMBRIDGE, Mass. — As Lotus Development Corp. moves into its second decade, it leaves behind the image of a one-product company that dugged it for years.

But the recent success with its Notes workgroup platform and communications software has created a more difficult challenge. Lotus now faces an increasingly complex customer base of traditional and newer corporate users.

Several customers contacted recently said that while Lotus is making progress in meeting these diverse requirements, it has not yet mastered this balancing act.

"I think they've got some good people who are responsible for the vision going forward," said Robert Klech, vice president of investment systems at Prudential Investment Corp. But "sometimes they don't listen enough and ask enough questions."

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Lotus' Monsi: "We essentially have two business models."

Novell shift to lift NetWare 3.11

BY JIM NASH
CW STAFF

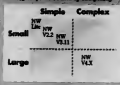
PROVO, Utah — Novell, Inc. has decided to extend the life of its NetWare Version 3.X network operating system indefinitely, an about-face that should please users who were resisting the upgrade to Novell's upcoming high-end networking system.

Novell's NetWare 3.11, the most current edition, seemed destined to hit a dead end once the feature-laden Version 3.2 was introduced later this year. But under a new plan, Novell will call the next version NetWare 4.0 and will continue to enhance the 3.X product line, said Bob Young, marketing director

at Novell's NetWare Systems Group.

"Our customers were saying NetWare 3.11 cannot go away," Young said. "What we lost sight

By the numbers
Novell's decision to indefinitely postpone NetWare Version 3.11 is part of a plan to stretch its product line by complexity.



of is that there are a heck of a lot of customers out there who don't need all the bells and whistles of 4.0."

One such company is Kevin L. Erwin Consulting Ecologists, Inc. The Fort Myers, Fla., ecology consulting firm is just now in the process of moving from NetWare 2.15 to 3.11, primarily for its higher speed and Microsoft Corp. Windows support, according to Bill Lauson, a systems analyst at the company. A decision from Novell to keep 3.11 going "would be very well

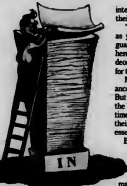
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IN DEPTH

Layoffs leading to IS overload

First Interstate Bancorp. shaves information systems staff by 68%. The city of Boston cuts its IS group from 125 to 95. Baxter International trims staff 20% to 610. Fleet/Norstar Financial Group eliminates 1,300 IS staff members and is in the process of laying off another 1,500. And the list of layoffs continues goes on and on.

These numbers tell the tale of a profession that has recently been battered by layoffs, and experts say there is no relief in sight — especially for hard-hit industries such as banking and defense. Low morale, stress and



intense work loads have taken their toll on remaining staffers.

"I'm frustrated and as nervous as you can get... I have no guarantee that I'm going to be here tomorrow," says John Radeo, a systems administrator for the city of Boston.

Maintenance, quality assurance and projects are suffering. But layoffs can also bring out the best in an IS staff, with one-time specialists broadening their skills and pitching in to get essential work completed.

Beginning on page 75, *Computerworld* takes a revealing inside look at these four organizations now dealing with the aftermath of layoffs.

PC giants consider office link

Borland, WordPerfect eye applications suite

BY CAROL HILDEBRAND
and MARK HALPER
CW STAFF

WordPerfect Corp. and Borland International, Inc. are discussing plans to create a suite of applications to tangle with rivals Microsoft Corp. and Lotus Development Corp., according to sources close to the companies.

Discussions reportedly involve plans to co-market a group of Microsoft Windows-based applications that would compete with similar offerings, such as Lotus' SmartSuite and Microsoft's Office packages.

Sources said it is likely that WordPerfect for Windows and Office, the company's electronic-mail package, will pair with Borland's forthcoming Windows versions of Quattro Pro and Paradox. It is unclear whether a graphics package will be involved. Pricing is expected to be competitive with the rivals' \$795 price tag, sources said.

Mum's the word

Both companies acknowledged they are in discussions but declined to comment more specifically. Sources said an announcement could come as soon as June 16, when WordPerfect will hold a press conference to discuss

Continued on page 7

Shrink-wrapped Unix to take on Windows

BY MARKFRAN JOHNSON
CW STAFF

SUMMIT, N.J. — Two weeks away from the debut of its low-end desktop Unix operating system, Unix System Laboratories, Inc. is changing its Destiny. The

product's name, that is — not what the future may hold.

USL's so-called Destiny operating system, set for introduction June 16, will be officially called Unix System V Release 4.2. Pricing is expected to fall in the \$500 range.

When the system hits the market on Intel Corp. personal computers in September, USL hopes to do serious battle with Microsoft Corp.'s DOS/Windows and its upcoming Windows NT technology environments. A lesser but still significant desktop competitor is IBM's OS/2, analysts said.

USL will position the 32-bit, multitasking System V Release 4.2 as the Unix alternative to Windows NT or OS/2 for users who are "upgrading" from DOS and downsizing from mainframes and minicomputers into distributed client/server computing.

This scalable, modular version of Unix System V will run Unix applications in native mode and DOS applications in emulation mode. Analysts familiar with the product said it performs well in DOS emulation.

"This is shrink-wrapped Unix, and I think it's going to do

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INSIDE

Mac-AS/400 connectivity to get boost. Page 4.

At Firestone, multiuser DOS is where the rubber meets the road. Page 6.

Apple's Newton comes to fruition. Page 13.

DEC targets Unix transaction processing. Page 20.

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Quotable

"I can stay fat and happy with 3.11 for two, maybe three years. We can wait for 4.0 capabilities."

HELL LAURON
KEVIN L. BROWN
CONSULTING ECOLOGIST

In reference to Novell's decision to extend NetWare 3.11's life. See story page 1.

DESKTOP
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IN DEPTH

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EXECUTIVE BRIEFING

■ Novell will change direction on the next version of NetWare, renaming it Version 4.0 and giving new life to the 3.11 family. The decision should position NetWare 3.11 as a standard for workgroup networking, while moving 4.0 into the high end. Novell also offers two other low-end product families. Page 1.

■ Automated help desks offer quick, effective responses to user problems while helping IS managers track problems and plan for the future. But do help desks need expert systems to get such results? Many are satisfied with just the basics — call logging and tracking systems — and are satisfied with the price as well. Page 65.

■ You can put an Apple in your pocket, but not a Macintosh. Apple's new handheld executive organizer, called Newton, marks a bold new direction for the company. The sub-\$1,000 machine can automatically add an appointment to a calendar, dial a phone or send a fax. Availability: early 1993. Page 13.

■ Bridgestone/Firestone is dismantling its troubled Unix plan, opting to deploy a multitier DOS solution at its 1,600 service centers nationwide. Page 6.

■ Borland and WordPerfect are reportedly teaming up to offer a suite of Windows-based office applications that would include WordPerfect, Quattro Pro and Paradox. The combo could be a potent competitor to Lotus' SmartSuite and Microsoft's Office. Page 1.

■ Sun users react positively to the introduction of Sun's next-generation SPARCstation 10 family. Page 41. Unix System Laboratories will introduce Unix System V Release 4.2 in two weeks, aiming it at desktop users. Analysts say it has a pretty good chance. Page 1.

■ Layoff survivors say cuts leave projects unfinished, spirits low and work loads heavy. Survivors at the city of Boston, Baxter International and First Interstate Bancorp say layoffs cause anguish — but also some opportunities. Page 78. IS professionals who put the customer first often reap career benefits for going the extra mile. Page 83.

■ Few banks are outsourcing these days, and there's a reason: Newly served in-house bank IS shops are giving outside competitors a run for their money. Page 12. Sources say EDS and McDonnell Douglas are hammering out a 5-year, \$150-million outsourcing deal. Page 12.

■ On site this week: Investments in EDI are paying dividends at Stride Rite, where the shoemaker has computerized its order-taking to improve customer relations. Page 53. Publisher Simon & Schuster, which is bringing its varied departments together under a common computer system, finds that a programming tool cut a year of development time for a key system element. Page 61. Servers, Sybase and IBM PS/2s are at the core of Smith Barney's plans to put a trading terminal on every securities trader's desk. Page 48. Computer graphics are helping physicians at Phoenix Baptist Hospital say what words cannot as they use pictures to educate the staff, the public and their patients. Page 35.

The 5th Wave



"I'm afraid I don't understand all the reports of our upgrade having a delayed release date. Unless... wait a minute - How many people here DIDN'T KNOW I was speaking in dog months?"



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Novell to boost WAN performance via NLM

BY JONAS M. WEXLER
CW STAFF

PROVO, Utah — Novell, Inc. confirmed last week that another NetWare Loadable Module (NLM) for accelerating the performance of its NetWare network operating system is now in customer test sites.

An NLM dubbed Service Advertising Protocol (SAP) Restrictor is under customer evaluation to let network administrators determine how often NetWare servers broadcast routing

table information across their networks. It would reduce the frequency of communications among servers routing Novell's Transport Protocol from every minute to whatever frequency the user desires.

Currently, Novell's routing software automatically broadcasts routing table updates from server to server once a minute, explained Neville Purvis, supervisor of the integrated computing environment at the Ontario Hydro Research Division in Toronto, where the NLM is currently being tested.

"Do users really need 1-minute updates?" he asked. "How often the update broadcasts occur should really be decided by the network administrator."

The electric utility is standardizing on NetWare 3 releases corporatewide and is just starting to analyze how shifting the router broadcast loads would affect network overhead.

"As we link remote sites onto our corporate network, this should help us restrict some of the negative implications of

IPX," Purvis said.

IPX has historically been notorious for network bottleneck problems, although Novell made strides since the launch of the network-oriented NetWare Version 3.11 last year to streamline IPX.

For example, its BurstMode Protocol NLM allows NetWare servers to bundle up to 64K bits/sec. packets of data and burst them across the network rather than requiring a server acknowledgment after the transmission of each packet.

Glenn Fand, president of the Greater Boston Area Novell Users Group, said the BurstMode NLM will probably have more of an impact on user networks than SAP Restrictor because BurstMode will affect all NetWare nodes, not just servers. However, he tagged SAP Restrictor as another example of Novell beefing up performance by streamlining NetWare's more visible option for the wide area.

But Fand, who is a principal resource specialist at a large Northeast defense electronics firm, said his firm will likely leverage the SAP Restrictor as part of an overall effort to alleviate IPX bottlenecks.

Apple/IBM team shifts to Mac-AS/400 links

BY KIM S. HASH
and JIM NASH
CW STAFF

RESEARCH TRIANGLE PARK, N.C. — An IBM executive involved in the firm's alliance with Apple Computer, Inc. confirmed last week that the two companies have reworked portions of their 11-month-old partnership. Now, networking products — not reduced instruction set computing (RISC) machines — are expected to be the first fruits to drop.



Michael Furry, IBM's manager for the Enterprise Networking Group under the firms' joint development agreement, told *Computerworld* that plans from "a significant number of large" IBM Application System/400 and Apple Macintosh users forced the vendors to "reprioritize our objectives," which were originally outlined in July 1991.

At the time, the splashiest parts of the new partnership were the anticipated advanced version of IBM's AIX Unix operating system fronted by a Macintosh user interface and jointly built desktop machines based on IBM's RISC chip, called Power PC/CW, July 8, 1991.

In response to queries from customers, easing communications between AS/400 minicom-

puters and Macintosh systems is now near the top of the "to do" list. The first products for the task are expected by year's end.

Users interviewed recently were eager to see improved Macintosh-to-AS/400 interoperability.

"Connectivity could certainly get a lot better. There's a fundamental discontinuity between the systems," said Carson Soale, president of Computer Applications Specialists, Inc., an independent software firm in Beltsville, Md. Soale said many members have connected the machines and "many users would hook them together if the connection was easier."

Calling for help

IBM could not provide precise figures on the number of AS/400 customers who have connected Macintoshes to the system, but Sandy Gant, an adviser at IBM's Interoperability Center in Dallas, estimated that about 20% of the 60-odd calls he receives monthly are from users seeking help with this issue.

"I'm looking for transparent communication, where I can have access to files on the AS/400 without losing the power of the Mac," said Stephan Rathback, a systems operator at Wings for Learning, a distributor of educational products in Scotts Valley, Calif.

Furry pegged late 1992 for delivery of such a product, namely a server based on Data Access Language (DAL), which is Apple's connectivity language that lets Macintosh users access relational database information stored on minicomputer and mainframe hosts. A DAL server is "a high priority for us," Furry said. Apple has licensed DAL to several vendors this year.

Overall, users said that while current communications between the two systems may be acceptable, it preempts them

from taking full advantage of the strengths of each machine because Macintoshes must emulate dumb terminals.

"The Mac can't act like a Mac when it's talking to the AS/400," said Gene Gelfman, president of Commex, the national IBM midrange computer user group.

WMAQ, an NBC affiliate in Chicago, experienced keyboard mapping incompatibilities. One of the most common ways to get

AS/400s to talk to other hardware is via IBM's Systems Network Architecture. But the protocol does not support AS/400's native 5250 emulation on Apple hardware.

So Macintoshes connected to the minicomputer must emulate 3270 terminals, which, users complained, can cause keyboard mapping problems. When WMAQ tried to connect several Macintoshes to a central AS/400 earlier this year, the station saw

gaining network and AS/400 emulation disruptions.

The station finally demanded that Apple and Andrew Corp., its third-party software provider, come in and solve the problem.

"The emulated translation can be difficult," Gant conceded. The 5250 emulation should provide relief and is due out in the first half of next year, Furry said. Also slated for release at that time is a Macintosh version of IBM's PC Support product.

War rages over DECstation's loss of OSF/1

BY MARYFRAN JOHNSON
CW STAFF

The "flame wars" were raging on the international Usenet network last week, as disgruntled users aired their views on Digital Equipment Corp.'s changing Unix strategy.

"Call up your sales criteria and complain!" was typical of the advice repeated by users who are angry with DEC's stated intention not to run the Open Software Foundation's OSF/1 Unix operating system on future versions of its DECstation line. Those workstation and servers are based on Mips Computer Systems, Inc. R3000 processors. They currently run an initial release of DEC/OSF/1 and DEC's own Unix variant, Ultrix.

DEC officials emphasized last week that customer demand for DEC/OSF/1 on the Mips-based line could still change their minds. However, DEC/OSF/1 is currently slated only for the company's Alpha reduced instruction set computing platform, due out by year's end.

That scenario, several users stressed, leaves thousands of DECstation customers with the choice of migrating to Alpha or sticking with an Ultrix platform whose future is uncertain.

"I think people feel betrayed," said Michael Santagelo, the Unix and VMS systems manager at the University of Maryland. He is a lecturer in College Park. "I haven't seen this much [discussion over

Usenet] since Hewlett-Packard decided to ax Apollo. This is even worse." He suggested users "stop the flame wars on this subject" and promote ideas such as encouraging DEC to outsource its Ultrix and VMS development for the Mips-based DECstations.

Usenet is a loose collection of bulletin boards containing a variety of "news groups" for back-and-forth commentary on some 2,000 different topics. Discussion about DEC's Unix policy reversal was taking place last week in the comp.unix.ultrix and comp.sys.dec newsgroups.

Willing to reconsider?

Many users speculated that DEC is floating a trial balloon on this issue. They said they hope that if enough customers complain, it will be shut down. "We need these machines to have a future. I sure hope they'll reconsider," said John Haws, a software engineer at Iowa State University's computer center.

A user from upstate New York said his third-party software costs "will increase significantly if I have to run my software on mixed platforms."

One DEC customer at the University of Queensland in Australia weighed in to say he wanted DEC/OSF/1 on the DECstations regardless of his purchase plans for Alpha machines. "We will have DEC/Mips-based boxes on which we wish to run an identical operating system as possible... for several years,"

A user from a province firm recommended harsher measures. "Stop bothering to deal with a company that has accomplished nothing but utter confusion in years," he said, "and go with someone who has shown some consistency and dedication. Sun maybe, or Nest."

At another technical site, one systems manager said plans to purchase a number of DECstations this summer have been sidelined. "I've already recommended to management that we consider removing Mips-based DECstations from the list."

DEC employees were also taking part in the Usenet discussions — sometimes defending the company line but just as often siding with rate customers.

"I personally think this is a bad decision," one DEC employee said. "This makes me look like a liar with some of my customers, since I told them we'd support OSF/1 on Mips."

"I still think having one Unix-based operating system is a good plan, but it's basically a no-win situation," another DEC employee added.

Still another DEC employee explained how the company got "stuck" at the intersection of the University of Queensland to the Mips R4000 chip's late arrival to market at performance levels already surpassed by IBM and Hewlett-Packard Co. and the Alpha chip's turning out faster than ever anticipated. "Things always look simpler from the back seat of the car," he said.

WENT HERE
HILL ARMS,
SCOTT MURRAY,
JOHN SCARLEY,
JOHN YOUNG
AND LARRY ELLISON
AGREED TO
COOPERATE ON?

[REDACTED]

NEWS SHORTS

IBM sues Comdisco again

IBM, its leasing and finance subsidiary IBM Credit Corp. (ICC) and two ICC partnerships last week sued Comdisco, Inc. again, charging the third-party computer leasing giant with counterfeiting 17 IBM 3090 mainframes. The complaint was filed in Delaware Superior Court, which is gearing up to hear the *IBM v. Comdisco* case filed in January 1991. In that case, IBM first accused Comdisco of illegally selling and re-leasing IBM parts and, according to many in the leasing arena, hung a pall over the practice of computer subleasing.

Sprint, Centel plan megamerger

U.S. Sprint Communications Co. and Centel Corp. have reached a definitive agreement to merge into a single telecommunications service company. It was announced last week. The new Sprint will have an asset book value of nearly \$14 billion and annual revenue of \$10 billion. Centel is a Chicago-based firm that provides local exchange telephone services in six states, as well as cellular communications systems in a variety of metropolitan areas. In addition to its long-distance services, Sprint provides local telecom services in 17 states through its United Telephone operating companies.

Prime buys Intel service group

PrimeService, the support division of Prime Computer, Inc., bought Intel Corp.'s North American Field Service and Customer Training group. Financial terms were undisclosed, but officials said the Intel staff will now work for Prime. PrimeService, which brought in 45% of Prime's total 1991 revenue of \$1.4 billion, will now service Intel's base of 600 customers who require support for OEM products and maintenance on Intel's Multibus and private-label platforms. Approximately 30 of the Intel technicians moving to Prime are Novell, Inc.-certified network engineers, which Prime previously lacked.

IBM clone maker to debut in Europe

IBM's European clone subsidiary has a name. Officially slated to begin business Friday, Individual Computer Products International (ICPI) will be a rebranded version of IBM's UK Data Processing Systems, according to UK sources. ICPI is scheduled to formally unveil a notebook computer and a desktop model in London on Thursday. Although IBM insisted this is not its announcement, Bill McCracken, general manager of Personal Systems for IBM Europe, is expected to be there.

SunExpress sets up in Japan

SunExpress, a business unit of Sun Microsystems, Inc., last week expanded its operations into Japan to provide a new distribution channel for quick order of Sun products by phone or fax. SunExpress offers customer-installable products such as storage, supplies, accessories, software and bus expansion products. Japan has been Sun's fastest-growing geographic market for the past year, and International Data Corp. recently reported that Sun has a 25% share of the workstation market there.

Short takes

AT&T will make its InterSpan Frame Relay Service available in Europe later this year through its AT&T Intel subsidiary. Initial availability will be in the UK, France, Germany, Belgium, Spain, Sweden and the Netherlands. . . . Borland International, Inc. and the Software Developer's Co. (SDC) have completed the sale of SDC's Brief and Screener's Appointer product lines to Borland. . . . Unisys Corp. has set up a data communications satellite link between the U.S. and joint-venture company Tata Unisys Ltd. in India. . . . SEIL Systemhouse, Inc. has sold an \$8.7 million contract with the Canada Post Corp. . . . Micras Systems, Inc. has inked a deal with Granite Communications, Inc. to integrate Granite's Wi-dipad data communications into its point-of-sale system. . . . Bellcore and Travelling Software, Inc. both said they will support Apple Computer, Inc.'s Newton pocket organizer with their communications products.

More news shorts on page 16

Firestone turns off Unix road

BY ELLIS BOOKER
OF STAFF

ROLLING MEADOWS, Ill.

After hitting the skids on a multi-year effort to revamp its car repair centers nationwide with a network of open systems, Bridgestone/Firestone, Inc. has quietly reignited the project with multitier DOS.

The tire company recently awarded San Jose, Calif.-based IGC a contract to supply its VM/386 MultiUser Operating System — a multitier DOS operating system — to 1,600 Firestone Master Care Service Centers nationwide.

Troubles with the Master Care Project surfaced early last year when Bridgestone/Firestone sued its database vendor, Oracle Corp., for \$10 million.

The lawsuit charged Oracle

with failing to deliver its SQLForms 3.0 and RDBMS 6.0 database products on time or with the required features. Citing the ongoing suit, Bridgestone/Firestone information systems executives declined comment on the decision to jettison Unix.

But observers outside the tire company speculated that the Master Care Project ran into trouble in part because of its scope. The project involved a revamp of all the centers' in-store computers and applications as well as the wide-area network tying them together.

Plans for that network, using AT&T's Software Defined Network data network, were also scrapped, according to sources.

"I would not say they lowered their sights [by moving off Unix]. . . I'd say they now have

a phased implementation, which will be enhanced over time," said David Chittum, president and chief executive officer of Burbank, Calif.-based AMS, Inc. AMS is supplying a version of its computerized Ecac 3 parts catalog for the IGC platform.

In addition, a point-of-sale (POS) system being developed internally at Bridgestone/Firestone will run under the IGC operating system. That system will replace the existing dedicated NCR Corp. POS devices.

About the only part of the original plan being retained will be the hardware platform: AT&T Work Group System Center computers.

IGC President Timothy J. Miller said the VM/386 software will be rolled out to the service centers at the rate of about 100 stores per month.

NYMEX to gain ACCESS to 24-hour on-line trading

BY THOMAS HOFFMAN
OF STAFF

NEW YORK — A 24-hour on-line trading system is expected to bring the New York Mercantile Exchange (NYMEX) a 10% to 15% increase in trading volume — possibly 25% if links to foreign exchanges are added.

NYMEX's American Computerized Commodity Exchange and Services System (ACCESS), slated to go live before the end of this year, is a product of the dramatic changes in the world oil market, according to Stephen C. Daffron, NYMEX's senior vice president of planning and information services.

Although the Organization of Petroleum Exporting Countries (OPEC) once dictated prices, disagreements within OPEC during the 1960s shifted price-setting power to traders on the floors of the world commodities exchanges, Daffron noted.

Oil first priority

ACCESS, a fault-tolerant network of personal computers and Unix servers, will primarily handle oil futures and options but will also process options and futures trading on platinum and gasoline. The network will link to NYMEX's four Tandem Computers, Inc. Cyclone fault-tolerant processors used to manage its back-office operations.

NYMEX currently handles 85% of oil futures trades worldwide each day, but its trading floor is open only from 9:45 a.m. to 3:10 p.m. That translates to 185,000 to 200,000 oil contracts each day, or 150 million barrels of oil at approximately

\$20 per barrel per day.

NYMEX began developing a prototype of its futures trading system in July 1989 and, in November 1990, chose AT&T and Task Management, Inc., a Chicago-based software firm, as developers.

Task Management had developed continuous trading systems for the London Futures and Options Exchange and the Sydney (Australia) Futures Exchange.



ACCESS is expected to bring NYMEX a 10% to 15% increase in trading volume; system will mainly handle oil futures and options

"We wanted someone who understands not only the trading systems environment, but someone who was up to date with the software required, since most trading software is antiquated," Daffron said.

In addition to wanting a Unix-based software system with DOS workstation capabilities, NYMEX required a package that included a "crack spread," according to Glenn R. Windstrup, president of Task Management. A crack spread enables the ex-

change to trade one contract against another between heating oil, fuel oil and crude.

The firm's software enables traders to monitor transactions in real time. The system displays the high end and low end of trading prices, the depth of the market and the aggregate volume available for trading.

Daffron and AT&T was hired for its expertise in networking, hardware and network management. Under its five-year contract, AT&T is providing NYMEX with three StarServer FT-tolerant computers and 38 StarServer servers, connected over an AT&T StarLAN local-

area network. Each StarServer supports 24 users and eight others on a backup basis in a clustered environment. Overall, the StarServers support 816 U.S.-based NYMEX trader workstations with member exchange firms, with one-third of those in N.Y.

AT&T has also constructed an alternate data facility for NYMEX in Rochelle Park, N.J. In the event of a disaster, NYMEX will be able to resume trading through the alternate data center within an hour.

PC giants consider office link

CONTINUED FROM PAGE 1

details of its recent reorganization.

Application suites were designed to tempt corporate buyers into standardizing on a family of one vendor's applications through low prices and common interfaces. The move by Borland and WordPerfect is likely in response to a market share threat that analysts said the competing offerings represent.

Introduced in October 1990 and at Comdex Spring '92, respectively, Office and SmartSuite offer full-blown word processing, spreadsheet, graphics and a single-node E-mail license. With both packages priced at just \$795, buyers essentially get two free applications.

"Any other companies that want to present themselves as one-stop shopping really have to pay attention" to the bundled suites, said Bill Higgs, director of software research at Computer Intelligence/Infocore.

Analysts marked the discussions as an indication of software industry acceptance of such bundling. "It certainly is a validation of the idea that these suites are a trend," said Jesse Berst, editor of industry newsletter "Windows Watcher." Berst said Office had been selling "phenomenally well."

Bundled software also allows vendors to introduce less popular software into the corporate mix. In the case of Word-

Perfect and Borland, it would also allow access to a potential gold mine of untapped users, as the companies both market successful packages to their respective user bases.

Perfect opportunity

Noting that there is also a tendency for WordPerfect customers to use Lotus' 1-2-3, "Borland gets a great opportunity to find and market to them," noted Amy Wohl at Amy D. Wohl Associates in Bala Cynwyd, Pa. It could also give WordPerfect's Office product a much-needed larger audience, she said.

However, Terry Quinn, an analyst at Kidder, Peabody & Co., expressed skepticism that the two companies could come up with the right mix of products. "To finish off the suite, they need a graphics package," he observed. Borland does not offer graphics software, and WordPerfect's DrawPerfect is not a household graphics name.

Quinn also questioned the need for a database product in such a suite. Whereas Lotus and Microsoft offer a common interface throughout products in their respective bundles, Borland and WordPerfect could potentially lack commonality, he pointed out.

A second sticking point is the fact that such a suite of applications includes two products that are not yet on the market.

Borland does not expect to ship Windows versions of Quattro Pro and Paradox until late this summer.

In spite of the drawbacks, users applauded the bundling concept as a chance to keep their software budget in line. "It sounds great to me," said Linda Deisberg, a network specialist at Pajanssa Pharmaceutical in Deerfield, Ill. "We use WordPerfect and Paradox, and if one is going to be almost free, it certainly is an incentive" to buy.

Clifford Coelhar, a computer technical specialist for the state of Washington's Department of Natural Resources, pointed out that Borland could benefit from WordPerfect's print driver expertise, while WordPerfect could use more experience in object-oriented programming.

CORRECTIONS

In a story about Digital Equipment Corp.'s on-line transaction processing products in the May 25 issue, Transarc Corp. officials were incorrectly quoted as extending DEC's distribution services. It is extending the Open Software Foundation's Distributed Computing Environment distribution services.

In an item in the May 4 issue, Samsung Information Systems America, Inc. was referred to as Information Systems America, Inc.

Contrary to what was reported, DEC's DEC/OSF/1 operating system does run on some of DEC's Unix-based DECstation/DECsystem products (CW, May 25). Systems that do support DEC/OSF/1 include the following:

- DECstation 2100, 3100 and 3100 S.
 - DECstation 5000/120, 125 and 200.
 - DECsystem 3100, 5000/200 and 5100.
- The following systems do not support DEC/OSF/1:
- All VAXs.
 - DECstation 5000/20, 25, 133 and 240.
 - DECsystem 5400, 5500, 5800 and 5900.
 - DECsystem 5000/25 and 240.

Check out the
Marketplace Pages
on Page 91.



NetWare for VMS comeback infringes on DEC's plans

BY ELIZABETH HORWITT
CW STAFF

BELLEVUE, Wash. — NetWare for VMS has come back from the dead to haunt Digital Equipment Corp.'s plans to provide similar capabilities within its own Pathworks environment.

Originally developed for Novell, Inc. by Interconnections, Inc., the product is said to enable NetWare clients to use DEC VAX drives as additional DOS stor-

age to share files with VMS users and print files on VAX machines.

Novell officially discontinued it last February when it announced an agreement with DEC to integrate NetWare with VMS via DEC's Pathworks client/server software.

Interconnections, an Emmaus, Pa. subsidiary, then took back NetWare for VMS and reintroduced it in March as File Sharing Services. The reincarnated product is finding a niche not only among for-

mer NetWare for VMS customers but also among those who are unwilling to wait for DEC's Pathworks-based offering.

While DEC has promised an initial announcement sometime this year, full NetWare/VMS integration is unlikely to arrive for about two years, according to Jamie Lewis, a vice president at The Burton Group, a Salt Lake City-based consulting firm. That market window is Interconnections' opportunity, he added.

The U.S. Postal Service's division in Anchorage, Alaska, recently implemented File Sharing Services as a way for DEC and NetWare users to access either NetWare or VAX/VMS printer services, according to Jim Millman, supervisor of electronic data processing systems operations. "This has kept us from needing to

put a second terminal on users' desks."

The Anchorage division was not impressed with what it has seen of Pathworks, Millman said. "We also heard complaints from other [postal service] sites about the complexity of configuring Pathworks for both VMS and the LAN."

DEC has provided vague and conflicting information about what Pathworks for NetWare will actually do, sources said. One point of conflict is whether the product will let NetWare users access VAX services via Novell IPX, said Mark Roy, a network operations consultant at John Hancock Financial Services in Boston. Currently, users need IPX for NetWare servers and DECnet for VAXs, which creates "RAM cram," Roy said.

Several customers said they were put off by Pathworks' client-based — rather than server-based — pricing structure, which penalizes those wanting to purchase a limited number of services for a large number of clients. "Otherwise, it may be more advantageous for us to stick with [Interconnections]," said Don Edwards, a network analyst at M. W. Kellogg Co. DEC would not comment.

Customers applauded Interconnections' readiness to add enhancements. "Novell didn't do anything except a few touchups," Edwards said.

For example, with the Interconnections product users no longer have to do an "econfig" to resolve differences between the types of Ethernet packets used by NetWare and VMS systems. Interconnections has also added support for VMS Version 5.5 and promised support for NetWare 3.X releases by year's end. NetWare for VMS ran only on older VMS and NetWare Version 2.X systems.

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Novell to resell Gupta products

BY JEAN S. BOZMAN
CW STAFF

MENLO PARK, Calif. — Gupta Technologies, Inc. is expected to disclose this week that equity partner Novell, Inc. will soon distribute Gupta's relational database and related software tools.

Novell's vast distribution channel should help 8-year-old Gupta boost sluggish sales, which reached only \$23 million last year, analysts said. Novell owns 19% of the relational database management systems vendor.

The products, which will be distributed worldwide by Novell, include Gupta's SQLBase 5.0 RDBMS, its SQLWindows applications development tool kit and its Quesad ad hoc query package for end users. Novell was not available for comment.

The deal could hurt sales of NetWare SQL, Novell's own RDBMS for personal computer local-area networks, said Richard Fischelstein, general manager of Performance Computing, Inc. in Chicago.

"It adds a degree of credibility over other RDBMS vendors but only until Novell makes an agreement with somebody else," added Donald Feinberg, a software analyst at Gartner Group, Inc. in Stamford, Conn.

Novell is already supporting Sybase, Inc.'s NetWare Loadable Module (NLM) for the Sybase SQLServer on NetWare 3.11.1 LANs. An Oracle 6.0 NLM also runs under NetWare.



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 **SYBASE**

CLIENT/SERVER ARCHITECTURE FOR THE ON-LINE ENTERPRISE

Users leery of multiprocessing

Many to stand by PC LANS until more needed features are given to gear

BY MICHAEL FITZGERALD
CW Staff

While personal computer hardware vendors chase after multiprocessing as though it were the Holy Grail, users have so far expressed limited desire to join the crusade. Alternatives such as PC local-area networks may keep multiprocessing a niche market when the technology stabilizes sometime in 1993, analysts contend.

Stumbling blocks include a lack of tailored operating systems and application software as well as few tools that adequately measure performance gains from asymmetric multiprocessing systems such as Compaq Computer Corp.'s SystemPro (see story at right).

"We now have enough other architectural and topological ways to put systems together because of networking software so that multiprocessing is no longer the only logical growth path," said Peter Kostner, vice president at Aberdeen Group, a consulting firm in Boston.

Serious doubts

Touted as something on which users can run heavy-duty applications without spending the money that mainframes cost, multiprocessing servers have met with some user skepticism, particularly among users with little interest in Unix.

Nationebanc Systems, Inc., for instance, is testing the most powerful single-processor IBM Personal System/2 Model 95

against a Compaq SystemPro and will then pit the winner against supervisors from Paralink Computer, Inc., NetFrame Systems, Inc. and Tricord Systems, Inc. Nationebanc does not expect the supervisors to be too keen to win.

"When you look at the multi-

Technology, Inc., a consulting firm in Hampton, N.H. Compaq would not give numbers but acknowledged that only 15% of SystemPro users use two processors. Because the SystemPro is based on the DOS environment and DOS was not designed to use multiple processors, some

ed servers, and unless you're running Unix, we haven't figured out what a good use for it would be. Maybe down the road we'll use it," said Bill Gage, project leader at Turner Corp., a contracting firm in New York.

Still, al-Hilali projected that "as applications become available, we will make use of that, and as we start downsizing, multiprocessing will become attractive for applications and databases but not for file servers."

Future outlook

Microsoft Corp.'s Carl Stork, vice president of business systems development, said Windows New Technology will lead to a major market for multiprocessing.

"I would be surprised if two-processor systems were not reasonably common on desktops within five years," Stork said.

Analysts are less inclined to agree, but most said they see a need for multiprocessing server-oriented products, despite their slow start.

"The hardware is not early. They're right on target, and if there was software, people would buy it," said Natasha Krel, assistant program director at Meta Group, Inc. "What's lacking — and there's no great news there — is the tools." She added major applications will have to be rewritten for new architectures, "and it's not a trivial problem."

Andrew M. Serbold, editor in chief of "Outlook on Professional Computing," said that in a server-based transaction processing environment, multiprocessing "makes a lot of sense — you don't have to upgrade, and you can offload things that need more power" to other processors.

MP—Mighty powered or unified product?

Potential

- Scalable architecture
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- Dedicated processor capability
- Cost less than large systems

Peril

- Few software packages either operating systems or applications
- Asymmetric architecture offers little performance increase
- Cost more than uniprocessors

CW Chart: Jason Greenman

processing concept in an asymmetric-type environment [such as Novell, Inc.] at what point does multiprocessing performance actually start degrading vs. Intel's rate of producing fast processors?" queried Wesley Bryant, Nationebanc's manager of new technologies. He said the real question for the bank is, "Do we ever get to a multiprocessing server-type of need?"

Compaq, which dominates the relatively tiny market for multiple-processor, PC-oriented servers — having created the market in 1989 with its SystemPro — has sold only 32,000 systems, according to WorldGroup

SystemPro users report little or no performance gain from the second processor.

Based at the First National Bank of Boston, which had a dual-processor SystemPro running Banyan Systems, Inc.'s multiprocessor-capable Vines operating system, "we took off [the second processor] because it wasn't being used very much," said Hilal al-Hilali, senior section manager of the technology integration center at the bank.

Another SystemPro user who runs Vines said he received little or no benefit from dual-processing SystemPro.

"We don't have heavily load-

Direct aim

Multiprocessing is old hat in proprietary environments such as the IBM or Unisys Corp. mainframe worlds, in part because the operating systems are built to run on more than one processor. In the PC server world, operating systems typically handle multiple processors with difficulty, and hardware has tended to be built around asymmetric architectures. The goal of most vendors is to build symmetric multiprocessing.

"Very simply, a symmetric multiprocessing means each processor can do anything any of the other processors can do," said Kimball Brown, a senior PC hardware analyst at International Data Corp. in Mountain View, Calif. "An asymmetric system usually has one processor dedicated to I/O and one or more dedicated to data."

Brown said asymmetric systems are easier to design but also less effective in an environment with a great deal of I/O. "The second to fourth processors only add incrementally — you don't get close to linear performance," Brown said.

MICHAEL FITZGERALD

TI, Tandy to ambush 386 notebooks with 486 attack

BY MICHAEL FITZGERALD
CW Staff

TEMPLE, Texas — Texas Instruments, Inc. and Tandy Corp. have jumped into the 486 notebook saddle, with pricing aimed at pushing 386 notebooks off the fast track.

Both TI and Tandy's Intel Corp. 1486SX-based notebooks are priced around \$3,000, a point below the list price for 30386SX-based notebooks from companies such as Compaq Computer Corp. and Toshiba America Information Systems, Inc. TI's machines are slated for availability next month; Tandy's machines are expected to ship next week.

"What would you buy, a 486 or a 386, if the price on the 486 was less?" asked Nasir Ahmed, TI's portable products marketing manager.

At least one user said a 486 would not be enough for a sale. "What we want in the next generation is the 486, but we also want upgradability," said Kevin Maloney, manager of technology planning and office automation support at Pepsi-Cola International, Inc. in White Plains, N.Y.

While TI's TravelMate 4000 line does not feature upgradability, analysts said the 5.6-pound Travelmate 4000 WinSX/16, WinSX/25 and WinDX/25 were innovative. "I'm impressed with what they've done," said Richard Zwickelmann, senior personal computer analyst at International Data Corp. in Framingham, Mass.

He said TI's BatteryPro power management software made its claim of four to five hours of battery life seem believable, its display is much improved over the good display of the Travel-

Mate 3000 and optional small local-area network and peripheral adapters are a good idea.

Zwickelmann also said TI had done a good job of tailoring the products to run Microsoft Corp.'s Windows 3.1. These include TI's Drag N Go utility, which lets users move a file from one application to another by clicking on icons.

Race is on

While Ahmed said TI believes its pricing and features will give it as much as an eight-month window of opportunity in the fledgling market for 486 notebooks, analysts disagreed. "It is a window of opportunity for TI, but other vendors will be there," said Joe Ann Stahel, president of Stahel & Co. in Plano, Texas.

TI's advantage could be short-lived. Compaq is expected to introduce two notebooks based on 33-MHz 486DX chips next month, and Zenith Data Systems is close behind with a 486-based notebook, analysts said. Both companies refused to comment.

Traveling system

TI's new portables target the price-conscious power user

	TM4000 WinSX/16	TM4000 WinDX/25
CPU	16-MHz 486SX	25-MHz 486DX
Main memory	4M bytes RAM, expandable to 8M bytes	4M bytes RAM, expandable to 20M bytes
Mass storage	80M-byte hard drive	120M-byte hard drive
Software	Windows 3.1 & MS-DOS 5.0 BatteryPro Power Management	
Price	\$3,199	\$4,399
Availability	July	July

CW Chart: Michael Sappes

Analysts said Tandy's notebooks were impressive as well but that their 60M-byte hard drive maximum, in this configuration, might be a drawback for the market.

The Tandy 4800 HD uses a 20-MHz 486SX and will sell for \$2,999, the same price as Tandy's recently announced 386SX-based 3330 notebook.

The \$3,499 Tandy 4860 HD uses Intel's 33-MHz 486DX. Both models weigh less than 6 pounds have 60M-byte hard drives and 4M bytes of random-access memory, expandable to 20M bytes.

Some analysts said 486 notebooks may well become the standard for corporations purchasing new notebooks by 1993.

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Bank IS fights outsourcing challenge

Race to farm out is receding, but in-house pacts far from guaranteed

BY NELL MARGOLIS
CW STAFF

The information systems outsourcing media that seized the U.S. banking industry in the past several years may not be over, but it has hit one doozy of a hull.

The virtual standstill in last year's fast lane is the result of several factors, according to banking analysts. For one, banks in general have pulled out of the bottom-line panic that had recently driven them to outsource in droves. With the worst of their bad loans now written off, many banks can afford to sit back a bit and mull their IS options.

In addition, noted Kevin Moody, an analyst at Technology Investment Strategies Corp. in Framingham, Mass., a recent federal investigation into prac-

said Jonathan Palmer, chairman and chief executive officer of Barnett Technologies, Inc., which provides the lion's share of IS services to Barnett Banks, a \$33 billion, 33-member bank holding company based in Jacksonville, Fla. "If you want to survive, you had better act as if you're in competition with outsiders" — because, in effect, you are."

In November 1990, Barnett Technologies was spun off as an independent, for-profit subsidiary of Barnett Banks. Currently, the banking group provides some 80% of the technology group's annual revenue, said Palmer, who is also chief technical executive at Barnett Banks.

"We treat internal clients the same way we treat our outside clients with tender loving care," Palmer said. Every time his

Information Officer Donald Holla will soon pledge to provide internal customers with service at a price that is equal to or less than an outsourcer's."

In bidding against outside IS providers really a significant departure for financial organizations' internal IS operations? Bank on it, said M. Arthur Gillis, president of banking consultancy Computer Based Solutions, Inc. in New Orleans.

"Theoretically, banks have bought into that concept for a long time," said Gillis. "In practice? Forget it." He recalled a banking IS landscape in which "management pretended to consider outside bids; the computer department pretended to match or beat them."

No more complacency

The recent outsourcing boom lowered the curtain on internal IS complacency in two stages, Gillis said. First, strapped and scared banks welcomed outsourcing as a quick fix for blooded bottom lines, a move that scuttled the assumption that a bank would be slow to bypass its own IS shop.

Now, Gillis said, those banks that have not already farmed out core IS functions are in less of a rush to do so — thus the "paralytic" 1992 deal tally to date (see chart). However, he said, several years of seeing what the outside specialists had to offer left banks too savvy to settle for the status quo. "Today," he said, "bank managers are ready to tell their IS shops, 'If an outsider can do it better, an outsider will.'"

Bank IS executives agreed that this will continue to be the case as most large banks at least some of the time. "It's all situational," said Michael Packer, senior vice president of technology strategy planning at Bankers Trust New York City. "You can't just say, 'Banks should outsource' or 'Banks never should outsource.' Which bank? What kind of outsourcing deal? Under what circumstances?"

At First Chicago Corp., Chief

Ex-EDS president takes helm at Perot

BY MARK HALPER
CW STAFF

HERNDON, Va. — Morton Meyerson, a former Electronic Data Systems Corp. president who helped build the company into a mainframe outsourcing powerhouse, is returning to the services industry with client/server religion as chairman of Perot Systems Corp.

Meyerson will take over for H. Ross Perot as chairman and chief executive officer effective today. Perot, who is running an unofficial presidential bid, will remain on the board. Meyerson was instrumental in building EDS into a multimillion dollar international computer services firm from the late 1970s into the mid-1980s.

Meyerson, who left EDS in 1986 after General Motors Corp. bought the company, is relinquishing his year-old position as an adviser to personal computer maker Dell Computer Corp. and is dismantling his Dallas-based technology investment and consulting firm, 2M Cos.

Remaining in an advisory capacity with Dell would constitute a conflict of interest that would jeopardize Perot's vendor independence, Meyerson said. He said he is completing a "strategic transaction" for Dell but declined to elaborate.

Perot Systems will give Dell the same consideration as other vendors when shopping for PCs, Meyerson said.

PC power

Meyerson also said his year as a Dell adviser "opened my eyes to the power present in PCs, networks and servers and to the power that's coming. I hadn't touched a keyboard for 15 years until last June."

Asked how the services and outsourcing business had changed during his 5½-year absence, the incoming Perot Sys-

tems chief again alluded to trends in PC computing.

Meyerson said the mainframe "still has a place" in corporate computing but that its role "is substantially less" than when he worked at EDS.

While Perot Systems and EDS have competed head-to-head for a number of outsourcing



Meyerson says Perot will target areas that EDS does not — but he would not elaborate.

pacts, Meyerson said he intends to avoid direct competition with his former company. He said Perot Systems will try to target industries and areas that EDS does not emphasize, although he would not specify what those areas might be.

"It's like when I was at EDS, and there was IBM. It was smarter to go places where they're not," Meyerson said.

One disadvantage in competing with EDS is the relatively small size of Perot Systems, which has 1,600 employees and operates on a run rate in excess of \$200 million. By comparison, EDS has 70,000 employees and posted \$7.1 billion in revenue last year.

Perot Systems recently won two outsourcing contracts in Europe totaling \$1 billion (CW, May 11). One of those was to replace a mainframe system with a Unix-based client/server solution for Boudigne, France-based Europcar International.

No longer bankable

Outsourcing activity among banks has slowed considerably this year

	Number of financial institutions outsourcing	Total asset value
1990	45	\$188B
1991	58	\$314B
1992**	10	\$12B

**Includes only commercial banks and thrifts with more than \$500M in assets.
**As of May 15

Source: Computer Based Solutions, Inc.

CW Staff: Michael Kaplan

sources associated with bank outsourcing may be worth as little as bank leavies of entering into deals that might appear tainted.

And, "The rush has already occurred, so many of the banks that were going to outsource already have," Moody said.

Few analysts say they expect outsourcing vendors to simply fold their tents in the banking arena. Whatever form the next round takes, however, outsourcing will find themselves competing with a tighter, tougher IS organization.

"We're not technically bidding, but we act like we are,"

group contracts within the Barnett family, he said, "we commit to a level of service, we commit to a line of delivery, and we commit to a price."

Late last month, The Chase Manhattan Bank NA ended a months-long flirtation with outsourcing core IS operations to IBM subsidiary Integrated Systems Solutions Corp. (ISSC), opting to deal with its own vastly reorganized IS shop. Like Barnett Technologies, however, Chase's IS department reportedly had to beat ISSC's offer to get the business.

At First Chicago Corp., Chief

EDS negotiations proceeding with McDonnell Douglas — but slowly

BY MARK HALPER
CW STAFF

DALLAS — Uncertainty over government military spending is believed to be dragging out outsourcing discussions between Electronic Data Systems Corp. and aerospace vendor McDonnell Douglas Corp.

The two companies are hashing out a deal believed to be worth at least \$150

million over five years, sources close to both companies said. St. Louis-based McDonnell Douglas is reportedly awaiting congressional budget action before committing to the outsourcing of production engineering systems, the sources said.

Both firms have engaged in on-again, off-again talks for about two years. The discussions advanced last fall, after EDS bought McDonnell Douglas' systems in-

tegration arm, McDonnell Douglas Systems Integration Co. (CW, Nov. 11, 1991), which is believed to have been a roadblock to the deal.

The McDonnell Douglas job is expected to include manufacturing software from EDS equity partner The Aak Cos. and computer-aided design software from Unigraphics, an operation EDS acquired from McDonnell Douglas. EDS declined to comment. McDonnell Douglas did not respond to queries by press time.

According to Tom Nolle, president of consulting firm Cini Corp. in Voorhees,

N.J., EDS is keenly eyeing the aerospace industry because budget cuts are predisposing companies to seek out-sourcers. At McDonnell

Douglas, like at other large manufacturing companies, core operations provide computing services to other groups. If those core operations were to be cut, the company would then be inclined to hand over the services duties to an out-

sourcer, Nolle pointed out.

Military aircraft procurement totals last year topped out at \$9.4 billion, a 39% drop from \$15.3 billion in 1990.

Apple tailors handheld organizer for busy execs

BY JAMES DALY
CW STAFF

CHICAGO — Apple Computer, Inc. last week plucked the first fruit from its newly formed Personal Interactive Electronics Division, announcing a long-awaited handheld executive organizer that many users said they can't wait to stuff into their pockets.

The tiny machine, called Newton, is not a version of the Macintosh but the first of what Chairman John Sculley has called "personal digital assistants," a new class of handheld devices brought about by the convergence of the personal computer, communications and consumer electronics industries.

"This is not a shrunken-down PC," product manager Michael Chao said.

Newton, which debuted at the Consumer Electronics Show, weighs about a pound and uses an object-based handwriting recognition system that can read printed notes and then automatically add an appointment to a calendar, dial a phone or send a fax.

If a user prints "Lunch with Ted at noon Wednesday," for example, the software will place the appropriate appointment in the calendar. "Call Ted" would provide a list of phone numbers and then dial the one the user touches. Later models will add voice recognition, Apple Vice President Larry Testa said.

The system will include basic applications software, with some versions being customized for particular industries.

Built for Apple by Sharp Corp. in Tokyo, Newton will sell for less than \$1,000 when it goes on sale early next year, Chao said. Sources said that price could drop to an low as \$700.

Many users said Newton could be a big hit with busy executives or salesmen if it lives up to Apple's promise. "We've already sold on the palmtop and pen-based technologies but still haven't seen them implemented to our satisfaction," said

Steve Birgfeld, manager of computing standards at the information systems division of Martin Marietta Corp. in Chantilly, Va.

Birgfeld added that Newton will need to offer an instant boot-up and a simple way to transfer data in order to score points at his firm.

Officials at Cupertino, Calif.-based Apple said Newton will network with other PCs via a built-in wireless infrared link. They added that Apple and third-party software vendors will also provide linking software that allows Newton to work in multipatform environments.

Richard Lester, vice president of infor-

mation services at Associated Grocers, Inc. in Seattle, expressed some interest in outfitting his sales staff with Newton but only if it offers substantial amounts of storage.

"Our salespeople like to stuff a lot of information in their machine, and Newton would need to be able to handle that," he said. "If it did fit the bill, we'd be pretty pumped up about it."

Apple officials were short on specifics about how much storage Newton would offer but noted that customized versions of Newton will be made available with varying capabilities.

The machine will also employ a super-



Apple's Newton can read printed notes, dial a phone or send a fax

fast microprocessor that will be produced by a joint venture set up last year by Apple and chip makers VLSI Technology, Inc. and the UK's Acorn Computer Co., sources said.

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Tandy, Zenith eye palm-size CPUs

CHICAGO — Both good things and profits can come in small packages, or so Tandy Corp. and Zenith Data Systems hope as they join Apple Computer, Inc. in the market for handheld organizers.

Tandy announced a joint venture with Japan's Casio Computer Co. to create what it called Personal Information Processors. GeoWorks, Inc. will supply its Geos operating system, and Palm Computing, Inc., a Tandy subsidiary, will supply application software. The group expects to ship products sometime in 1993.

The group offered no price for its products, but sources said it would aim for the \$500 price range.

Zenith Data began shipping its ZDS-106 and ZDS-112 Pocket Organizers. Using Zilog, Inc.'s Z-80 chip, an 8088-compatible processor, the organizers will weigh under a pound, run for four hours on two AAA batteries and measure 3½ by 6 in. The ZDS-106, with 64K bytes of memory, will sell for \$199; the ZDS-112, with 128K bytes of memory, will be \$299.

MICHAEL FITZGERALD

New life to be breathed into NetWare V3.11

CONTINUED FROM PAGE 1

come, because I can stay fat and happy with 3.11 for two, maybe three years," Lawson said. "We can wait for 4.0 capabilities."

Other users also responded favorably to Novell's ongoing support for 3.11. "We're in the process of upgrading to 3.11 with about 25 Novell systems," said Rob Byers, network coordinator at Madison Area Technical College, based in Madison, Wis. "We probably don't care about what's in 3.2 at this point."

Not overly worried about users, however, were not unduly concerned about Novell's threats to discontinue 3.11, said John O'Loughlin, manager of premise area networks at McDonald's Corp.

The Oak Brook, Ill., fast food giant is predominantly a NetWare 3.11 installation, "with probably one or two 286 servers around," he said. "Our first responsibility is making

sure users get a stable operating environment; it never bothered us when a vendor says, 'You have to do this.'"

Novell's decision clears the way for the vendor to develop four networking product groups. NetWare Lite supports small,

WE PROBABLY DON'T care about what's in 3.2 at this point."

ROB BYERS
MADISON AREA
TECHNICAL COLLEGE

basic peer-to-peer networks; NetWare 2.2 gives workgroups simple file and print functions; 3.X will serve medium- and large-size complex networks; 4.X will serve large, complicated networks.

A CPU-independent version of NetWare, now referred to as 5.0, is still under development. Several industry observers

and managers of NetWare networks expressed surprise earlier this year upon hearing that the new version would become part of the existing 3.X line (CW, Feb. 24).

Version 3.X supports Novell's Network Management Services as well as its Apple Computer, Inc. Macintosh and IBM's Systems Network Architecture connectivity, all of which aid in connecting sophisticated workgroups.

Version 4.0 will have all of the capabilities found in 2.2 and 3.11. But it will also support 1,000 concurrent users, an X.500-compliant global directory service, foreign language translation and an upgrade utility that will enable servers to be brought up from previous versions to 4.0 without shutting down the machine.

Computerworld has learned. None of these functions can be supported by the current 3.X line, Young said.

Novell acknowledged these differences and, at the request of its advisory council of customers, decided to make the next version a separate product line.

One concern for McDonald's is whether NetWare 4.0 will

DEC's latest Rdb version to store large image, text files

MAYNARD, Mass. — Digital Equipment Corp. officials said last week that they will ship Rdb Version 4.1, the latest release of DEC's database management system that features global buffering and "full VAXcluster support," later this month. The product was announced last year and was originally scheduled to ship in January.

This new version of Rdb is also designed to support efficient storage of large image and text files, allowing users to begin exploring the use of multimedia applications in conjunction with Rdb, according to DEC.

DEC SERB Version 4.1 is

also offered as an option to Rdb and is intended to meet security requirements specified by the National Computer Security Center. SERB meets C2 level security requirements, and B1 level SERB includes enforced mandatory access control so that data with different levels of security can be stored in one database, DEC officials said.

Both products are expected to ship before the end of the month. Pricing for Rdb Version 4.1 ranges from \$3,348 to \$215,158, and pricing for SERB ranges from \$3,600 to \$192,000.

MELINDA-CAROL BALLLOU

have a mirrored server feature, which Novell was rumored to be planning for NetWare 3.2. O'Loughlin said. "Novell has been talking about it for years, and it's important for critical applications," he said.

Novell's new strategy also saves an unspecified number of 3.11 users from having to upgrade to 4.X features they do not need, Young said. Another ad-

vantage of keeping 3.11 alive is that users will not have to upgrade directly from 2.2 to a far more advanced new version.

Young acknowledged that 4.0's capabilities will make it a niche operating system early on, but, he said, the market will grow into it just as it has with 3.X. Software developers' kits for NetWare 4.0 are shipping now, he said.

Shrink-wrapped Unix takes on Windows

CONTINUED FROM PAGE 1

quite well," said Kate Fessenden, an analyst at Meta Group, Inc. in Westport, Conn.

"There is every reason to believe that 4.2 could become the Unix standard" for PCA, said Michael Goude, an analyst at Patri-

croystems, Inc.'s Solaris 1.0 operating system.

"I haven't kicked any tires or taken a test drive yet, but my impression is that Windows NT is really addressing the DOS-based users who want more power,"

saw Architecture and Mips Computer Systems, Inc. platforms by year's end. That will pit USL against two additional Unix competitors: Sun's Solaris 2.0 and SCO's Open Desktop.

Sun is also making its own run at the PC market this fall with Solaris 2.0 available on Intel platforms. The target market for Solaris 2.0, however, is not low-end desktops but "Fortune 200" corporate environments interested in advanced networking, multiprocessing and object-oriented technology, said Mike Zagig, director of software engineering at Sunsoft, Inc.

The key move for Unix vendors in the PC arena will be to prove their market share rather than steal it from each other, analysts agreed.

Whoever it takes

Industry observers credit USL President Rod Pieper with turning USL into a market-savvy, cooperative organization during the past year.

"USL will do whatever it needs to get [Unix System V Release 4] technology on every desktop," Goude said.

All of this represents a marked expansion of USL's historic role as a Unix source code supplier to companies such as Sun, Amshah Corp. and Novell, Inc.

USL will now provide both

the source code and the "customer-ready" binary code to system and software vendors, who add their own layered products, repackaging the code and sell it directly to customers.

USL will ship Release 4.2 through its OEMs and through Novell, which formed the Unix joint venture with USL last December. Novell's Unixware product is built around System V Release 4.2, and USL will resell Unixware as both master binary and source code.

"We will have 14,000 Novell resellers who have special incentives to resell" Unixware, said Joe Menard, vice president of marketing at USL. "There will be a service and support network there for it, too."

Other changes in the wind are the establishment of USL's own "branding" program for Unix System V Release 4-compliant products and increasing cooperation and marketing deals with its longtime rival, the Open Software Foundation.

Chips and Technologies hits back at Intel patent attack

BY MICHAEL FITZGERALD
CWSF01

SAN JOSE, Calif. — Chips and Technologies, Inc. counterattacked Intel Corp. last week, claiming that the Santa Clara, Calif.-based company violated its patent on page memory access. In February, Intel had sued Chips and Technologies over both its Super386 and PC/Chip microprocessors and its Super387 math coprocessor, alleging patent infringement.

In its counterattack, Chips and Technologies claimed it had not violated any relevant Intel patents. The company fired back that Intel's 80386LS microprocessor's integrated memory controller violates a Chips and

Technologies page memory access patent.

In addition, Chips and Technologies claimed that Intel has attempted to monopolize the math coprocessor market.

Chips and Technologies has filed similar cases against several small chip makers.

An Intel spokeswoman expressed little concern about the Chips and Technologies counter-suit, suggesting that the counter-suit was simply a response to Intel's suit.

Analysts said they agreed with that assessment.

"It sounds like a tempest in a teapot," said John Ladd, vice president and senior technology analyst at PaineWebb & Co. in New York.

Discontinued			
USL's Unix System V Release 4.2 and Intel's OS/2 and Windows NT			
New Technology for development on the desktop			
	USL 4.2	Windows NT	OS/2 3.0
Addressing architecture	486 bytes of memory; 486-type hard drive	804 bytes of memory; 804-type hard drive	486 bytes of memory; 486-type hard drive
Optimized architecture	5486 bytes of memory; 5486-type hard drive	804 bytes of memory; 804-type hard drive	486 bytes of memory; 486-type hard drive
Target platform	Intel (Pentium, Alpha) Intel	Intel (Pentium, Alpha) Intel	Intel
Availability	Unannounced (late)	Not yet announced	None

Source: Company, industry estimates

CW Chart: Tom Henderson

cia Seybold Group in Boston.

"Users already well-entrenched in the DOS world are still more likely to gravitate to Windows NT than to Unix," said Pat Thomas, a MIS director at Hickory White, a furniture manufacturer in High Point, N.C. Thomas uses The Santa Cruz Operation's (SCO) SCO Unix and Open Desktop systems, as well as Sun Mi-

Thomas said. "There's a real mid-shift jump in going from DOS to Unix."

Yet for those willing to make that jump, the MIS director added that, "a 'certifiable, standards-compliant' Unix, such as System V Release 4, would hold great appeal for customers."

USL officials said Release 4.2 will also run on Scalable Process-

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NEWS SHORTS

DEC execs take retirement

At least six Digital Equipment Corp. vice presidents will take advantage of DEC's early retirement program, which seeks to cut its employee base of 116,000 by 7,000 by targeting those who are over 50 years of age. The vice presidents reportedly include George Chancier III, vice president, marketing and finance; Henry Crouse, vice president, strategic relations; James Cadmore, vice president, operations staff; William Hoffman, vice president, U.S. sales; and Dominic Lacava, vice president, Unix-based software and systems. Other executives are expected to opt for the program, but a DEC spokeswoman refused to comment last week as to who would be planning to do so. Individuals planning to take early retirement could change their decision until the end of last week.

EDS to build business TV network

Multimedia Marketing Networks, Inc. has awarded Electronic Data Systems Corp. a \$2 million, multiyear contract to install and operate a digital television network that combines multimedias and business television. Called Interactive Information Networks, the system will deliver live news conferences, product introductions and emergency announcements via satellite to journalists, analysts and investment firms worldwide.

Anderson in 1994 Olympic deal

Anderson Consulting will be back on the slopes in 1994. The Chicago-based systems integrator last week won a \$4.5 million deal to install the core information system for the 1994 Winter Olympics in Lillehammer, Norway. The Info 94 system, an update of the one Anderson deployed at the 1992 Winter Olympics, will provide on-line access of scores and athlete biographies to visitors, journalists and officials at the games. Being built with Anderson's own computer-aided software engineering (CASE) tool, Foundation, Info 94 will also help out with accommodations, transportation, accreditation and security at the winter games.

Sequoia eyes fault-tolerant Mumps

Sequoia Systems, Inc. will announce a partnership today that brings fault-tolerant, multiprocessing Unix to the health care industry for the first time. In collaboration with Hewlett-Packard Co., GreyStone Technology Corp. and DataTree, Inc., Sequoia will market a centralized host system for Mumps applications in a client/server environment. Mumps is a standard programming language and database management system used in thousands of health care and financial applications.

Integrator C3 to be acquired

Governor systems integrator C3, Inc. agreed last week to be acquired by WSV Acquisition Corp., a privately owned company whose shareholders are principals in Severn Co., a Washington, D.C., integrator. Terms were not disclosed.

Oracle lands Sun factory business

Sun Microsystems, Inc. last week announced its selection of Oracle Corp.'s manufacturing and financial applications for the worldwide automation of Sun manufacturing facilities. The multimillion dollar agreement also includes Oracle's CASE products. The installation will take place during the next 18 months, involving an intercontinental network of Sun locations using multiprocessing Sun SPARC servers.

House committee stings Bells

A subcommittee of the U.S. House of Representatives last week approved by a 10 to 6 vote a bill that would preserve terms of the AT&T breakup agreement prohibiting the seven regional Bell telephone companies from manufacturing equipment and offering information and long-distance services. The bill would wipe out a court ruling last year that gave the Baby Bells the green light for information services. Ameritech Corp. called the bill "anticompetitive, anticonsumer, antiworker, anti-growth and... unconstitutional."

TI takes re-engineering plunge

Partnering with consultancy Price Waterhouse to target large projects

BY KIM S. NASH
COWI

PLANO, Texas — Already a top player in the CASE market, Texas Instruments, Inc. last week extended tentacles into the re-engineering business by teaming up with Big Six consultancy Price Waterhouse.

The two firms plan to offer RE for IE, a tool set and consulting service for re-engineering legacy systems into an application development environment using TI's Information Engineering (IE) methodology.

Analysts were enthusiastic about the announcement, saying that the partnership gives TI users a coherent way to streamline

the data and underlying business processes of older, problematic systems. TI had no re-engineering offerings until now.

"If you've got a 20-year-old undocumented application running on an old-style mainframe and [you] want to bring the system into the more modern part of your operation, you'll be interested in this," said Andrew Mahon, a senior research analyst at New Science Associates, Inc.'s Randolph, Mass., office. But it will cost you, he added.

A TI spokesman said official prices were not yet final, but Mahon, who has followed Price Waterhouse's application development endeavors closely, said, "These are multimillion dollar

projects on average."

Mahon attributed the cost to the large scope of the undertaking, which typically involves a team of programmers, consultants, Price Waterhouse's Arise reverse engineering tool and TI's computer-aided software engineering workbench, called Information Engineering Facility (IEF). A typical revamp job could take 18 to 24 months, Mahon estimated.

RE for IE will be aimed initially at the 550 sites TI claims for IEF, whose 1991 sales topped \$130 million. The new offering is now in beta testing at three undisclosed North American sites: a financial services firm, a health insurer and a federal agency.

New decade, new identity for Lotus Development

CONTINUED FROM PAGE 1

tions to see how customers are retooling help them."

Lotus has been winning good marks from corporate customers for its support of its Notes workshop environment. But among some of its longtime 1-2-3 spreadsheet users, Lotus continues to be criticized for not being as innovative as its competitors.

Some users are making strategic decisions based on Notes. In exchange, Lotus must provide a high level of support, effectively spell out its strategy and work directly with these users to incorporate their ideas into product plans.

Staying on top

Meanwhile, the core base remains concerned with product innovations and wants to see Lotus stay ahead of Microsoft Corp. and Borland International, Inc.

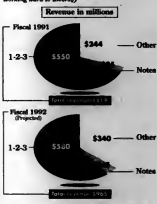
"We want to see them bringing Notes-like innovations back to the spreadsheet arena," said Jude Gartland, a senior vice president at the Lehman Brothers Division of Shearson Lehman Brothers, Inc. in New York. "We want excellent products — well-featured, well-tested. We don't need an intimate relationship. We need someone to turn to if we have problems."

Managing the two distinct customer requirements has be-

come "the defining management challenge of the company," Jim Mansi, Lotus' chief executive officer, said in an interview last week.

Lotus' position

Once considered an old-product company, Lotus is working hard to diversify



"We essentially have two business models," Mansi said. For the core group of users, the company continues to produce spreadsheet innovations, such as the Chronicle technology that will eventually group-enable spreadsheets, according to Mansi.

On the Notes side, Lotus is working on corporate accounts and playing up the popularity of the workshop platform. Mansi insisted that it is possible to keep

both customer sets as priorities.

This message is apparently not reaching all users. At Southern California Gas Co., 1-2-3 has long been the MS-DOS spreadsheet standard. Yet the company recently reviewed its options for a Windows spreadsheet, and "we are in the process of writing a recommendation for [Microsoft's] Excel 4.0," said Robert Holmes, a computer technology research analyst.

Holmes did not agree that the company has stayed focused on delivering top-notch spreadsheets. "In terms of their mainline products, there's been little innovation," he said.

Talking Note
For corporate accounts, Lotus is pushing its consulting services group, which it started two years ago and which now has about 25 clients. It is also making a serious effort to work with customers, said Michael Mandelbaum, a vice president of systems development at The Chase Manhattan Bank NA, which now has several thousand Notes users.

"With Notes, they are dealing with a class of customer that they didn't have access to before," Mandelbaum said. "Are they good at it? They are getting better. Before, they're not at all."

Mandelbaum said Lotus sends representatives to the Notes user group, and the company responds to comments on the Notes public databases.

In addition, Lotus is working with Chase to incorporate features into the next release of Notes, due out by year's end.

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Survey reveals downsizing not for everyone

BY THOMAS HOFFMAN
CW STAFF

NEW YORK — Downsizing might be one of the hottest buzzwords in the computer industry, but one survey indicates that a large percentage of mainframe and mini-computer shops running on-line transaction processing (OLTP) applications are not downsizing en masse.

At a seminar sponsored by The Standish Group International, Inc., a Hymettus, Mass.-based consultancy, most users said financial constraints prohibit them from downsizing their systems. In addition to the costs associated with migration, some users said certain OLTP applications require the robust processing power of their current mainframes and minicomputers.

Approximately 67% of the more than 300 information systems managers responding to the survey said their companies are not currently downsizing applica-

tions to smaller platforms.

James H. Johnson, chairman of The Standish Group, said the survey represents only certain applications, but he would not elaborate. Johnson did say that nearly 80% of the respondents plan to downsize their systems eventually but not for all applications.

"Because of the financial strains on the college, we're mainly concerned with putting out fires and keeping our systems running," said Sheri Frugis, director of educational computing at Baruch College in New York.

Of course, migration costs are not the only obstacles to downsizing. "Costs itself aren't a strong enough reason to

downsize," said Frank Bumberger, a vice president in retail banking at Citibank NA. "There can be big advantages to trying larger applications on smaller systems." But many of the smaller systems don't have the robustness of mainframes.

Some users attending the seminar said they saw hope for future OLTP downsizing projects. "We're seriously considering downsizing opportunities, but at the same time we're in the process of updating some applications," said Steven Stam, MIS director at the New York City Department of Sanitation.

According to the survey, while 80% of the respondents are operating in central-

ized mainframe environments, only 44% expect their present computer centers to remain centralized by 1994. Most attendees expressed a desire to migrate from centralized mainframe computing environments to two-tiered and three-tiered client/server computing models.

Citing cost constraints, Roger MacMillan, director of MIS at the Human Resources Administration for the city of New York, said, "We're moving to CASE tools [to facilitate migration], but that migration will be slow."

Meanwhile, few attendees saw Unix as a viable alternative to replacing proprietary operating systems and application software for OLTP. "We don't believe Unix gives us the security and the application functionality that we require at the bank," Citibank's Roger Alad said.

DEC energizes Unix OLTP line

BY MELINDA-CAROL BALLOU
CW STAFF

MATNARD, Mass. — Digital Equipment Corp. targeted the commercial Unix market last week with new transaction processing software.

DEC's TFrame software integrates Unix System Laboratories, Inc.'s Tuxedo System/T transaction processing monitor with DEC's Ultrix/SQL relational database. Ultrix/SQL is based on the Asit/Ingres relational database management system (see story at right).

TFrame offers transaction management routines that streamline application development, a custom-oriented forms package called Viforms, two ready-made clients and sample applications, DEC officials said.

TFrame's sample application programs include banking and personnel applications. By following instructions and

the provided examples, developers have a quick-start model, officials said.

DEC needs to make an offering available on Ultrix now, even though the company's strategic Unix operating system will ultimately be OSF/1, said Peter Katsner, a vice president at Aberdeen Group, a market research firm in Boston. "It should not be difficult for DEC to do the port to Alpha once that environment is production-ready."

ACMS support

DEC will announce OSF/1 server support for its high-end Application Control and Management System (ACMS) transaction processing monitor later this summer (CW, May 25). While ACMS targets heavy volume, high-end, on-line transaction processing applications, TFrame targets midrange applications.

The initial version of TFrame supports a single host DECsystem, but DEC predicts to make the software available in a multiple-host, distributed client/server version. The company will also integrate TFrame with a range of transaction processing monitors and RDBMSs. TFrame software pricing starts at \$3,530 on a DECsystem 5100.

Ultrix/SQL's future unclear

BY MELINDA-CAROL BALLOU
CW STAFF

MATNARD, Mass. — Digital Equipment Corp. may no longer bundle the Ultrix/SQL relational database management system with the Ultrix operating system once negotiations currently under way between DEC and The Asit Co. are completed, sources close to both companies were told.

The decoupling is seen as underwriting DEC's commitment to its strategic OSF/1 operating system running on its next-generation Alpha line of computers.

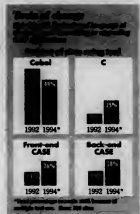
DEC officials would not comment on reports of the sale and said they will continue to sell the runtime version of the Ingres RDBMS along with Ultrix "for the foreseeable future." However, sources close to Ingres said the "experiment has not worked," and the 2-year-old agreement between the two companies will soon be terminated.

"The matter is under discussion between ourselves and DEC," said Bill Copeland, vice president of marketing at Alameda, Calif.-based Asit. "But we are clearly, for good solid business reasons for both companies, headed toward unbundling. We view it as a revenue opportunity to be able to sell our product to customers directly. This is not an indication that our relationship with DEC is not strong," he added.

Hardies to jump

Factors influencing Asit's Ingres Product Division's disenchantment with the arrangement include the costs of covering support for DEC's Ultrix/SQL users and the challenges the company has faced in attempting to sell the full Ingres product to DEC's installed base of Unix customers.

DEC officials said Ultrix/SQL will definitely not be bundled with OSF/1. The company will port its own Rdb RDBMS to OSF/1 and expects other third-party vendors, including Ingres, Sybase, Inc. and Oracle Corp., to bring their products over. Analysts said DEC does not want to undercut sales of its own database or those of third parties by bundling a proprietary database with OSF/1. But DEC and Ingres will facilitate the transition to OSF/1 for Ultrix/SQL users, officials said.



Source: The Standish Group CW Chart: Janet Conover

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CEOs clinch pact with DOE to speed computer research

BY IRAN S. BOZMAN
CW STAFF

PALO ALTO, Calif. — The doors to the nation's national energy laboratories were pried open last week for joint research and development with 10 major U.S. computer firms, including Apple Computer, Inc., Hewlett-Packard Co. and IBM.

The chief executive officers of the 10 computer vendors signed an agreement

with Department of Energy Secretary James D. Watkins that will speed the start-up of the joint efforts.

Such agreements will give American firms a competitive advantage in key technology areas such as data storage and parallel processing, Watkins said.

They will also aid the transition away from military research at national laboratories hit by recent defense cutbacks.

The CEOs, all members of the 3-year-old Computer Systems Policy Project

(CSPP), officially signed a "model" Cooperative Research and Development Agreement at HP's headquarters.

Watkins revealed that IBM had signed a specific agreement Wednesday with the University of California's Lawrence Livermore National Laboratory to establish a national storage laboratory to test new types of data storage components.

Cray Research, Inc., another CSPP member, signed a separate agreement with Livermore to study massively parallel computer architectures.



Apple's Sculley views technology as perishable

Watkins said. In March, Cray signed the first three Cooperative Research and Development Agreements with Los Alamos National Laboratory in New Mexico.

"We don't tell the companies what to do," Watkins said. "We are making the national laboratories' human and material resources available to win the international race for the commercialization of new technologies."

Under the Cooperative Research and Development Agreements, individual computer firms will be able to hold onto technology advances for several years before making the results of the research public. A new technology is to be used only within the U.S. — or within the U.S. firm's foreign operations — for the first two years after its invention. Companies may enter into agreements singly or together, but no multiple-vendor agreements have yet been signed.

"Clearly, the government does not want to step over the line into the commercial arena," Cray spokesman Steve Conway said. "This is about generic, or enabling, technologies. Once they're developed, anybody could make use of it."

First in line

Among the first users of the new technologies will be the Department of Energy's laboratories, including Livermore, Los Alamos, New Mexico's Sandia National Laboratories, Illinois' Argonne National Laboratories and Tennessee's Oak Ridge National Laboratory, CSPP officials said.

Speed is essential in getting research projects off the ground, CSPP members said.

"We view technology as something that is perishable because of the time it takes to get it to the market," said John Sculley, CEO of Apple and CSPP chairman. Before this, "the long [legal] procedures made it impractical for us to consider using these technologies," he said.

Sculley noted that all national laboratories spend \$70 billion each year, and only 2% of its expenditure is related to the computer industry. In contrast, 21% of all private-sector research is spent on computer-related issues, he said.

But questions about the "cultural" clash between public policy and private industry remain somewhat unsettled. "Information has traditionally been viewed as a public good from which companies can draw," said David B. Nelson, director of scientific computing at the Department of Energy's office of energy research. "But information also confers competitive advantage, which is to be held closely. That is a difference that has to be bridged."

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TECH TALK

Chip with zip

■ There may come a time when post office sorting equipment can read handwritten addresses. A project team funded by the U.S. Postal Service recently won a mask registration from the U.S. Copyright Office for an integrated circuit chip designed to be the core of an image scanner. The chip could read handwriting and provide an information update in less than 50 nsec. The chip was designed by electrical and computer engineers at the Center for Excellence in Document Analysis and Recognition at the State University of New York at Buffalo.

Making connections

■ A chip maker, a disk vendor and a controller manufacturer have teamed up in a search for a high-speed fiber-optic connection among computers and peripherals. Vitesse Semiconductor Corp. in Camarillo, Calif., Seagate Technology, Inc. in Scotts Valley, Calif., and Interphase Corp. in Dallas said they are working together to develop a low-cost, low-power ANSI X3T9.3 Fiber Channel chip set that could support serial communications at rates up to 1G bit/sec. The chip set, to be fabricated in Vitesse's 0.8 micron gallium arsenide technology, is likely to be used to link servers or disk drives and supercomputers.

New dimensions

■ Picture your face as a three-dimensional image in a computer. Researchers in the Multimedia Laboratory at the Georgia Institute of Technology said they have found a way to scan 3-D images by developing a device that automatically generates detailed computer descriptions of complex 3-D objects. The researchers said that sophisticated animation, computer-aided design, scientific visualization and medical simulation — often done manually with tools such as pen digitizers — would be easier.

BY ELLIS BOOKER
OF JUMP

Did an asteroid's impact 65 million years ago cause the demise of the dinosaurs? But more urgently: Could it happen again?

According to astronomers, there is at least a statistical danger of a large asteroid racing through space for an Armageddon appointment, with planet Earth.

Luckily, given the predictable nature of space orbits, humanity would have decades to decide what to do before the collision. Some have suggested detonating nuclear warheads near the asteroid to change its trajectory.

But, before redirecting the errant asteroid, it would need to be detected.

To date, only 10% of the estimated 2,000 large objects (1 km or more in diameter) approaching Earth have been discovered and tracked, according to NASA planetary scientist Jurgen Rahe.

Rahe and other scientists recently delivered to Congress results from workshops on the topic.

As a first step, the group recommended modernizing ground-based space observatories by replacing photographic methods of detection with electronic imaging, computers and software. Further down the road are decisions on issues such as the type of computer and networking technology that would be needed.

Earth to laptop: Network access from the air

BY ELLIS BOOKER
OF JUMP

OKBROOK TERRACE, Ill. — In the film 2001: A Space Odyssey, a space shuttle passenger watches a movie displayed on a small screen built into the seat in front of him.

Recently, the commercial airline industry flew closer to that future with the maiden voyage of FlightLink, an all-digital voice and data communications system that will soon allow airborne laptop users access to data networks on the ground.

Developed by In-Flight Phone Corp., FlightLink consists of the following three parts:

■ A customized, battery-powered server using an Intel Corp. 80386SX platform from Texas Microsystems, Inc.

■ An air-to-ground subsystem for digital voice and data communications from Pacific Communications Sciences, Inc. in San Diego.

■ Backlit LCD panels built into the back of every passenger seat.

In addition to the rectangular LCD screens, the seats will feature built-in telephone handsets that double as keyboards for the system.

Most observatories today, Rahe said, record images of the sky on photographic plates, which then must be manually measured to determine the trajectory and orbits of objects.

But an electronic imaging system, known as Charged Coupled Device (CCD), would permit computerized measurements.

Tom Gehrels, a professor at The Lunar and Planetary Laboratory at the University of Arizona, pioneered the use of CCDs for this purpose back in 1983 under a NASA grant.

"We find 250 moving objects per night," said Gehrels, adding that most of these are an asteroid belt. Each month the system also spies several fast-moving objects closer to the Earth.

Orbit action

After tracking these objects for a period of weeks, months and years, Gehrels can create an orbit path. Computers can project whether this path will eventually intersect Earth's orbit.

The data from the university's telescope atop Kitt Peak is sent through a massive CCD with 2,048 lines, each containing 2,048 pixels. The sky data is then passed to a Sun Microsystems, Inc. workstation, which does real-time calculations to detect the moving ob-

jects against the backdrop of stars.

Large asteroids are thought to connect with Earth about every 300,000 to 1 million years.

The reality of the danger was underscored in 1980, when a half-mile wide asteroid crossed Earth's orbit just six hours behind the planet.



Bernie Galt

US Air said it plans to outfit 10 Boeing 757s with the FlightLink system by the end of this year, and it will evaluate adding the system to the rest of its 444-plane fleet.

The airline said it will charge \$2 per

minute for telephone calls but will not charge for data services such as stock quotes and on-board computer games during the evaluation period. Besides placing telephone calls, in the future fliers will be able to view news, receive messages, view airport maps and even shop from their seats.

But by far the best news for frequent fliers with laptops are plans this summer to provide a serial port that accepts input from portable computers and fax machines at speeds of up to 9.6K bit/sec.

"One of the complaints many laptop users have is once they leave the ground they feel somewhat cut off," said Aaron Goldberg, senior vice president at International Data Corp. in Framingham, Mass.

FlightLink is the brainchild of In-Flight President John D. Goeken, a founder of both MCI Communications Corp. and Airphone, Inc. Airphone, which Goeken sold to GTE in 1986, provides air-to-ground telephone service for 11 U.S. airlines and Air Canada. Airphone's all-digital voice and data system, dubbed Genstar, was announced last September and is scheduled for rollout in the first quarter of 1993.



With FlightLink, airborne passengers can receive data from earthbound services

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EDITORIAL

What IS is

Forget about the sky-high turnover among the senior-most IS managers for a moment and consider this point: This is the age of the re-empowerment of IS, and, as such, it is the most potentially rewarding time ever to be in IS management.

That said, I for one am confused. Lately there's been an ardent attempt in some of my favorite trade publications to rename members of the IS community, or at least to split the community into the camps of "old" and "new" IS. This effort is reminiscent of the infamous "Coke, Coke Classic, double double decaf Coke with a twist" campaign.

The goal is to somehow magically transform PC publications, which have historically treated IS with utter disdain, into IS advocates — or should I say, "new IS" advocates. Along the way they hope to trash the reputation and standing of an important person — you.

That's right, you're the old fogey (average age of a *Computersworld* subscriber is 40, right on the button) who stands in the way of progress at your site. You're the person who tried to say "slow down" to the millions upon millions of PCs that found their way into corporations in the 1980s and that now have to be replaced because they can't communicate with one another. You're the immovable stump who insists on promulgating internal network standards so users can, in fact, access data in minis and mainframes. You're the Luddite who insists on a calculated approach to acquiring new technology. You're the killjoy who pollutes those great downsizing plans with dumb questions like, "Who's going to manage the LAN? Do you know how much it will cost? What will be done about data security?"

You. You're "old IS."

The biggest impediment by far to the acquisition of information technology today is the growing belief among non-IS executives that there's been little correlation between technology outlays and increases in white collar productivity. You "old IS" types have kept your legacy systems up and crunched 99.5% of the time and better. Meanwhile, the tens of millions of MIPS sitting on PCs — the PCs often brought in by the "new IS" — have spent the overwhelming majority of their time idle, their users often processing not better memos or reports but simply longer ones, more often.

So today there is a widely growing recognition that the willy-nilly purchase of whatever-the-hell is the latest and greatest technology must be reined in. Each purchase must become, to steal a line from John Donne, "a piece of the continent, a part of the main." That is, an integral part of a system. That integration job best falls to the group with a legacy of building reliable systems for three decades: the IS group. Old, new, modern, New Age. It doesn't matter. You know who you are.

Bill Laberia

Bill Laberia, Editor in chief



LETTERS TO THE EDITOR

Pizza chain likes Informix tools

I recently picked up your Buyers' Scorecard on midrange relational database systems (CW, May 4) and to my surprise found Informix ranked last in a number of categories.

Dominio's has used Informix products for more than five years, and they have always provided exceptional performance and support.

In fact, we recently completed a pizza store information management system that was developed with Informix tools and that uses the Informix database engine.

We are in the process of rolling that application out to

all of our corporate stores (approximately 1,000), and so far it has proved to be one of the most successful software projects in Dominio's history.

I would attribute a great deal of that success to the high quality of Informix's technical support.

I think all your readers should know that, contrary to your survey report, a great number of Informix customers are very happy with their product.

Ken Herr
Dominio's Pizzeria, Inc.
Ann Arbor, Mich.

Select outsourcing vendors carefully

Regarding your editorial on "Reinsourcements" (CW, March 30): The concept of outsourcing is not new; just the name is. It has been around for a long time, disguised as time sharing, service bureaus and facilities management. Only when the Kodak deal was consummated was the term outsourcing christened. I imagine it will be around in some form for many years to come.

I agree with your view that companies should look very carefully before committing to outsourcing, but common sense dictates that any undertaking of such magnitude is not without risks. To minimize those risks, the selection of the right vendor is most important. Not every vendor can do all things to all customers, and that is why the selection process is so critical.

It is my contention that a focused vendor evaluation properly matched with a customer's business objectives will greatly diminish the fear of failure and enhance the chances for success.

Rocco Luciano
Manager, marketing and sales
Agway Data Services, Inc.
Syracuse, N.Y.

Computersworld welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberia, Editor in Chief, Computersworld, P.O. Box 9177, 375 Cochran Road, Framingham, Mass. 01701. Fax number: (508) 875-8831; MCI Mail: COMPUTERSWORLD. Please include a phone number for verification.

College's projects are collaborative efforts

I feel it is important to respond to "Only the occasional moose..." (CW, May 18). The article states that I keep the primary

An atypical firm

In "Tiny dynamos advance the faith" (CW, May 11), I'd like to clarify a couple of important points regarding BSG.

First, our consulting and systems integration company name is BSG Consulting, Inc., not BSG Development, as was presented in the article. Second, if (as the article states), specialists like BSG typically have fewer than 20 employees, then BSG is very atypical. BSG has more than 150 employees, with headquarters in Houston and offices in Dallas and New York. And we're growing.

Steve Guengerich
BSG Consulting, Inc.
Houston

computer hardware "bumping," that I am making plans for an upcoming supercomputer, and that I am now trying to establish a telecommunications link with the Commonwealth of Independent States.

I did not state that I was responsible for the above projects. I outlined that the University of Alaska was involved in securing a supercomputer and that the university is developing telecommunications links with sites in, at that time, the Soviet Far East.

I have full appreciation for the responsibility of others in these projects. I would never take credit for their efforts and hope that appropriate credit will be given.

David N. Leone
Director
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DESKTOP COMPUTING

PCs AND SOFTWARE • WORKSTATIONS

IBM edges into search for next computer generation

BY MICHAEL FITZGERALD
OF STAFF

NEW YORK — IBM recently outlined a broad-based future product plan that both impressed analysts and left them skeptical. IBM's scope pleased

analysts, but its vision of a radically different computing paradigm raised questions as to how it would happen.

IBM executives outlined a two-year product cycle that on the hardware side ranged from a family of handheld devices to high-end "video" file servers that handle multimedia applications over a wide-area network.

"Many people won't recognize it is a computer they're buying," James A. Cannivino, general manager of the IBM Personal Systems Division, said of some of IBM's upcoming systems.

Though Cannivino and the

other executives offered few specifics, handheld personal computers could in fact seem more like consumer electronics products. Cannivino also pointed to a broad range of hardware and software alliances that will create new types of products.

Looking ahead

IBM's Personal Systems Division's strategy for the next 18 to 24 months is as follows:

Servers:

- Lotus Notes-specific application server to act as a "fat" database.

- Video server — designed with improved bandwidth and compression to run multimedia applications — will run data and video over telephone lines or through infrared and RF connections. (These video servers may fall into a category IBM calls "personal" servers, the size of a stereo component, which individuals will be able to use.)
- Tagging voice recognition product, designed for use with PCs.

Portables:

- A family of handheld Personal Digital Assistants that communicate wirelessly.
- PCMCIA-compatible Token Ring adapter card.
- PCMCIA-compatible 1.5-in., 40M-byte hard drive.



OF STAFF: JIM GOSWAMI

Cannivino said IBM envisions technology being used in such a way as to "in some cases... make obsolete the way we've done things before."

He pointed to reduced travel needs through the use of video-conferencing tools, for instance, and advances in portable computing and communications that might allow companies to move away from the traditional office environment entirely.

He said the company invested heavily in learning new technologies and new communications devices and object-oriented software as key initiatives.

IBM will also push to develop new server environments that can handle much more data than today's can. The company said it sees Notes servers, dedicated to handling communications, run over Lotus Development Corp.'s Notes package, that will allow users to build local-

area networks around so-called flat databases with easy access to unstructured data.

This could make for an envi-

Borland cites speed gain in Paradox 4.0 offering

BY MARK HALPER
OF STAFF

SCOTT'S VALLEY, Calif. — The personal computer world may be awaiting Borland International, Inc.'s Paradox database program for Microsoft Corp.'s Windows, but it will have to first settle for an upgraded version of Paradox for DOS.

Borland yesterday was scheduled to introduce Paradox 4.0, a database program that the company said runs 10 times faster than Paradox 3.5. Unlike Version 3.5, Paradox 4.0 includes what Borland called a Windows-like interface, although the interface is character-based.

The company also introduced a Novell, Inc. NetWare SQL Server version of its Paradox SQL Link, which ties Paradox to Novell's back-end SQL database program.

Borland also markets the product for use with SQL Servers from Microsoft, Sybase, Inc., IBM and Oracle Corp.

Although industry attention has focused on Borland's forthcoming Paradox for Windows, one DOS user said last week that Paradox 4.0 is just as welcome a development. Brian Smith, president of Information Center Associates, a Los Angeles-based Paradox user and Paradox development house, said

Version 4.0 includes unlimited field lengths that mark a significant improvement over Version 3.5's 255-character limitation. "For DOS customers who need to get day-to-day work done, Paradox 4.0 is going to be just as big a Paradox for Windows," he said.

Test results show

A Borland spokesman said the company will release benchmark figures comparing Paradox 4.0 to 3.5 and other database programs this week.

Paradox 4.0 is scheduled to be available this summer and is now in its final beta-testing stage, the company said. Borland will ship Version 4.0 before it ships Paradox for Windows, the spokesman said.

Borland set Version 4.0 pricing at the same level as 3.5 — \$795. To discourage users from waiting for Paradox for Windows, Borland is offering discounts on the regular \$199.95 upgrade. Depending on when customers bought earlier versions of Paradox and when they upgrade, they will be able to purchase an upgrade for either \$139.95 or \$179.95, Borland said. The company is offering a runtime version for \$99.95 for the first 90 days of availability. The regular suggested list price for the runtime version is \$250.

Computer graphics help carry physicians' message

Hospital's physicians, instructors use PC-based system to describe medical issues and procedures

BY CAROL HILDEBRAND
OF STAFF

PHOENIX — Driven by an increase in both federal right-to-know regulations and more knowledgeable patients, hospitals have been upping their efforts to educate the public and patients on health issues. At Phoenix Baptist Hospital and Medical Center, the staff has turned to computer graphics to help get the job done.

Ray Litman, coordinator of photography and audiovisual services at the hospital, said his department has been generating graphics for an increasing number of outreach programs, ranging from doctors' lectures on the acquired immune deficiency syndrome virus to newsletters and illustrated lectures sponsored by the hospital's community educational center.

Since August, the shows have been produced with Software Publishing Corp.'s Harvard Draw and Harvard Graphics for Windows.

Patient's rights

When the group started its effort about four years ago, Litman said, slide shows were more often seen at medical conventions than in meetings with patients. "Now," he said, "patients have to have more information by law than they did 10 years ago." He cited the "living will," which federal regulations mandate a patient be informed about and which the hospital has started giving seminars on.

The hospital employs about 900 physicians, including resi-



Computer graphics help staff at Phoenix Baptist Hospital explain the AIDS-causing HIV virus.

dents. While not all the doctors use the facilities, Litman said a core of physicians has developed a series of presentations based on their work.

The staff creates the shows with the Harvard packages running on 80386DX-based personal computers. The PCs are linked directly with the visual system at the education center.

Litman can either transmit his slides over the network to the center or sit in his office and run the slides, which are then projected at the education center.

"We would like to think that one of our primary goals is education," Litman said, citing doctor/patient discussions as an area in which he and his staff of three can help.

For example, a doctor sitting down with a patient before an angioplasty to explain the procedure and field questions can either use a video or slide presentation. Litman said graphics have an advantage over photographs, which tend to hit a little close to home for patients who are facing the same procedure depicted in the photos. "A drawing can be less threatening," he said.

Better angle
A second advantage is the fact that graphics can depict views that photographs cannot. For example, a cutaway side view of the heart and attendant arteries is useful in an angioplasty, a procedure in which a small balloon is inflated in an artery to push blockages to the sides of the artery.

Litman said that although he produces slides for a majority of the lectures, the doctors have just begun to play around with the Harvard packages as a video alternative. After creating a slide show, they can play the show back to a videotape machine.

"Now, when the doctor walks out of the office, he's got a VCR tape instead of a slide cassette and slides," Litman said. The staff is still working on finding inexpensive video boards with the resolution quality they need.

WINDOWS VIEW

Jesse Berst

What's a Win32S, anyway?



Microsoft spews out Windows code names at an alarming rate. It's not always easy to keep things straight among Windows 3.1, Windows New Technology,

Win32, Win32S, Windows 4.0, Windows for Workgroups and all the other variations on the Windows theme.

A few months back I took a look at Windows NT, Microsoft's brand-new 32-bit operating system. NT holds a lot of interest for IS shops that are seriously investigating rightsizing. It will have the robustness, protection and security they need to build mission-critical client/server applications.

While you're waiting for NT, currently promised for year's end, you can get started building 32-bit applications. And you'll be able to run those applications either on NT (when it appears) or on Windows 3.1. The secret is in something called Win32S, which is a limited version of the Win32 application programming interface (API).

Let me stop here long enough to emphasize that I am not trying to get into the political squabble of OS/2 vs. Windows NT. OS/2 offers 32-bitness right now, as I've discussed in a previous column. All I want to do here is alert you to a new development and its implications for IS departments. If you have made a commitment to Windows and you are also interested in 32-bit power, Win32S is something you should know about.

All in the family

To understand Win32S, you first need to get a handle on its big brother, the Win32 API. Win32 is the API for Windows NT. As such, it provides true 32-bit operation, flat memory addressing, multithreading, true protected operation and robust, system-level security as well as a program-wide exception handler, which frees developers from the need to examine the return values for each and every system function. Instead, they can deal with errors in a structured, "centralized" fashion. The primary design goal of Win32 was easy migration from Windows 3.1. In fact, Win32 is really just a superset of the 3.1 API with widened parameters.

Win32S, as a partial implementation of Win32, allows a 32-bit program to run with Windows 3.1, even though Windows 3.1 is essentially a 16-bit operating system. Win32S is not part of the shipping Windows 3.1. It works as a free runtime element that goes with the application, such as the Visual Basic runtime.

As you might imagine, Win32S can't provide all the benefits of its big brother. Some things just aren't possible with DOS as the underlying system. (That's why Windows NT is under construction.) In particular, Win32S can't handle the security features and other high-end robustness features.

So why would you want to consider Win32S? Quite frankly, some of its benefits are more important to commercial

developers. It lessens the risk of developing 32-bit applications because, with only slight modifications, those same applications can be sold to the installed base of Windows 3.1 users.

But Win32S also promises some advantages to corporate programmers. First, it lets them get started right now upgrading their Windows applications to get the power, speed and simplicity of 32-bitness. Second, it lets them create a single binary that will run either on Windows 3.1 or on Windows NT.

What happens if a program asks for one of the advanced features that Win32S doesn't support? When Win32S encounters an unsupported function, it returns an error code. It's up to the programmer to figure out how to handle those error

returns. It could be something as simple as a dialog box that says, "That feature not supported in this version."

But in many cases, the error handling will have to be more sophisticated to cope with a situation where certain features may or may not be available, depending on which version of Windows is running.

Won't this error handling necessitate a lot of extra code? Not according to Alastair Banks at Microsoft's Developer Relations Group, who claims that, in the beginning, most users won't use the advanced APIs that would return error codes. "Most people will go 32-bit without extra APIs or new code to start with," he said, "and then just select the few new APIs that could really make a difference when running on Windows NT."

"If the app never tries to use a new API," he continued, "then there's no extra code. If it tries to use a new API on Windows 3.1, then of course it must catch the error code and act accordingly. The extra error handling code isn't significant because the 'down-level' behavior is already coded."

If you've already gone through the pain of moving traditional programmers to the Windows GUI, then moving up to 32-bitness may be your next big step. Win32S may make that step a little smaller and a little safer.

Berst is the publisher of Redmond, Wash.-based "Windows Watcher" newsletter, a monthly briefing service for software executives and corporate technology managers.

RISC system/6000

Multimedia object software released

Lenel Systems' MediaOrganizer arranges multimedia data in many different formats

BY CHRISTOPHER LINDQUIST
OF SIEN

Databases are not just storing text and numbers anymore. Images are becoming common, and sound and video are not far off.

However, standard database management systems were not designed to deal with such new data formats. That is why Pittsburgh, N.Y.-based Lenel Systems International, Inc. created the MediaOrganizer multimedia object manage-

ment software.

MediaOrganizer runs under Microsoft Corp.'s Windows and allows users to organize, index and retrieve multimedia data in text, still image, animation, digital and analog audio and full-motion video formats. Images can be displayed in multiple scalable windows on a single screen.

Users can name multimedia "objects" and insert descriptions that can be used for later retrieval. Searches can be performed using several methods, including Boolean, wild card and synonyms.

The MediaOrganizer uses a point-and-click interface, and no programming is required. A report generator that can create electronic or printed reports is also included.

MediaOrganizer supports a variety of multimedia peripherals including Sony Corp.'s Video8 mini computer-controllable video player/recorder and Creative Labs, Inc.'s Soundblaster audio card.

MediaOrganizer's list price is \$795 for each user. Multituser and network licenses are also available.

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DECsystem [®] 5000	21.1 tpsA	\$18,101 per tpsA

IBM

Windows support in new MapInfo

MapInfo Corp. in Troy, N.Y., is bringing out MapInfo Version 2.0 desktop mapping software.

Designed for Microsoft Corp.'s Windows 3.1 environment, Version 2.0 geographically displays data from corporate databases and spreadsheets under Borland International, Inc.'s dBase, Lotus Development Corp.'s 1-2-3, Microsoft's Excel and delimited ASCII files. New features include buffering, which surrounds an uneven line or area for a specified distance, geographic search queries and dynamic map projections.

For graphics presentations, the product offers more than 100 line styles and fill patterns, and users can choose from a palette of more than 16 million colors. A built-in page layout capability merges and arranges maps, charts and text for one or more pages, and TrueType fonts allow for rotation of text labels to follow streets and other angles.

The company also introduced the MapBasic Development Environment, which was designed to help corporate developers customize desktop mapping applications. MapBasic costs \$795.

MapInfo Version 2.0 costs \$995. Shipments are scheduled for this month.

LEA DAVIDSON

IN BRIEF

Relief offered to riot victims

SourceMate Information Systems, Inc. plans to donate its accounting software to small and medium-size businesses that suffered damage or losses during the recent riots in South Central Los Angeles.

The offer expires at the end of November. Companies wanting to take advantage of it must meet specific requirements to receive the free software.

Verity, Inc. licensed its text search and retrieval technology to MicroTrac Systems, Inc., which will use the technology as part of the human resources software it sells.

Verity is also working with Lotus Development Corp., and its technology will show up in the next release of Lotus' Notes, which is expected at year's end.

Gupta Technologies, Inc. made the announcement that its SQLBase Server clocked in at 162 transactions per second in a Transaction Processing Council "B" benchmark test.

The B benchmark tests the throughput as measured in transactions per second, subject to maximum time constraint and the associated costs per transaction per second.

In this case, the cost was \$1,380 per transaction per second.

IBM searches for next generation

CONTINUED FROM PAGE 35

movement where a user would be able to enter a name and receive a list of all documents in the database where that name occurs and the context in which it is used, for instance.

These types of systems will be followed in market by vastly more powerful video servers, which will have full multi-media (data and motion video) capabilities and will connect wide-area networks.

IBM will also push infrared and cellular, or radio-frequency, communications as a way to transmit data as well as video, prompting some analysts to say it is trying

to circumvent telephone companies.

Canavino said IBM's server vision might culminate in a "personal" server. This might be the size of a common stereo component and yet be powerful enough to run motion video applications easily; it could also be mobile.

IBM also intends to build, or perhaps license, handheld personal digital assistants. Motorola, Inc. was cited as a business partner in this effort, which could produce a pen-based system that would be held in one hand and allow users to keep in contact with their offices.

Canavino said IBM sees communications speed and capabilities increasing as fast, or faster, than the rate of microprocessor development. Microprocessors double in speed roughly every 18 months.

"There's a paradigm shift coming in communications," he said.

Analysts pointed out that IBM would likely have company in its efforts, with some partners, such as Apple Computer, Inc., proving fierce competitors. Analysts said IBM had presented impressive ideas, although few observers were unqualified in their praise.

"They have lots of good ideas," said Dan New Jr., an analyst at Computer Intelligence in La Jolla, Calif. "The question is, how do they market them?"

Some analysts who attended the briefing expressed skepticism over IBM's plans. "They want us to be in hydroboats, but they're giving us rowboats right now," said Gerald Michalski, vice president at New Science Associates, Inc., a consultancy in Southport, Conn. At the same time, Michalski added that he liked many of the elements of IBM's PC strategy and said, "I don't see anyone else going front to back like IBM."

Several products likely to appear before the end of 1992 are a 1.8-in. hard drive that can hold 40M bytes of data and a Token Ring network adapter that is roughly the size of a credit card. Both devices are compatible with the flash card standard established by the Personal Computer Memory Card International Association. A clock-doubler version of its 20-MHz 1486SLC chip was also on display.

Robert Carberry, assistant general manager of IBM's Entry Systems Division, said a voice-recognition project called Tangora is also nearing the market. He also said the 80M bit/sec. Micro Channel Architecture recently announced on the RISC System/6000 will appear in Personal System/2s in the future.

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Business Process Reengineering	NO	NO	NO	NO	NO
Multi-Media Architecture Image Data Text	NO	NO	NO	NO	NO

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Opening new ports

Part of a series of Windows 3.1 user tips provided by Microsoft Corp. and based on questions commonly asked of Microsoft customer support personnel.

Q Can I use the COM3 and COM4 ports within Windows 3.1?

A This is dependent on your hardware. Under protect-mode Windows 3.0, it was often possible to use COM3 and COM4 for your non-Windows applications but not for any Windows applications, such as Terminal. This was a limitation of the COM3.DRV driver shipped with Windows 3.0. This driver always assumed IBM-standard default base I/O addresses and interrupt assignments for these ports. However, these "standard" settings are not industrywide and may not have been the ones used on your personal computer.

In Windows 3.1, you now have the capability to tell the COM3.DRV the correct base I/O address and the correct interrupt for each port. If your hardware will support such a configuration, you may be able to use COM3 and COM4 for your Windows applications, provided the following:

- You have correctly identified each port's settings in the Ports section of the Control Panel (use the Advanced Setting optional).
- The ports I/O base addresses are correctly identified in the systems BIOS table.

Serial ports that can share interrupt request lines are supported by default on Micro Channel Architecture and Extended Industry Standard Architecture computers. However, to use interrupt sharing serial ports on Industry Standard Architecture PCs, add the following line to the [386Enh] section of SYSTEM.INI: COM3SHARING=TRUE.



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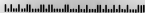
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dBase IV 1.5: Not quite the cat's pajamas

Borland's dBase IV Version 1.5

Reviews	Ease of use	Data integrity	Multitask support	Performance	Application development	Documentation	Service and support	Value	Overall
PC Magazine	Best tool available	NC	NC	Editor	Third-party integration	NC	NC	Value	Good (average)
PC Week 4/10/92	QBE facility easier to use	NC	NC	Many areas not improved	Programmers not targeted	NC	NC	Will keep current users happy	Not major step forward
PC World 4/18	Reliable technical support	Best of available	NC	Simple	Not targeted	NC	NC	Value	Good (average)
Users									
Steve Bush, Supply Management Inc.									Adaptation: Light
Terry Mulligan, Monsanto Chemical Group			NC						Improved speed and indexing
Michael Mink, Information Systems									Not very flexible, not very powerful
Terry Merila, Veritas Associates									Can hold its own applications
Analysts									
Mark Gorman, Morgan, Inc.							NC		Language is easy
James O'Brien, Strategic Information Services Group									Relatively unimproved

Key: ■ Very good ■ Good ■ Fair ■ Poor

Reviewer evaluations are excerpts from articles. Refer to actual reviews for details. User and analyst ratings are based on telephone surveys. NC: No comment.

Technology Analysis — A roundup of expert opinions about new products. Summary written by new products writer Derek Slater.

DBase IV Version 1.5 is the first upgrade to dBase since Borland International, Inc. acquired it last year. Reviewers agreed that the new version is solid and includes important new features, such as mouse support and a more open architecture for application developers. It is also significant in that it demonstrates Borland's commitment to the most common personal computer-based relational database.

However, reviewers also noted the conspicuous absence of the object-oriented technology prevalent in Borland's other products. With a version for Microsoft Corp.'s Windows platform waiting in the wings, users may choose to hold out for more.

Ease of use: Users will welcome the addition of mouse support, although PC World called dBase's implementation inconsistent. For example, a double click may yield two kinds of menu actions, depending on what part of the program a user is working in. Other enhancements include better control over the query-by-example (QBE) facility, which guides users through selecting the appropriate query commands.

The product provides more information about indexes, such as the FOR and UNIQUE functions, which indicate whether an index was created using the FOR or UNIQUE commands. dBase users can also incorporate third-party programs into the Control Center, allowing them to substitute a preferred text editor or other utility in

Vendor financial ratings			
Analysts	Short-term performance	Long-term stability	Outlook
Wall Street, Wall Street & Co., Inc.			Good
Michelle Preston and Jeff Burrows, Coopers & Lytle			Very good

Borland reported 1991 revenue of \$238.8 million and profits of \$26.8 million, a 127% increase over 1990.

place of dBase's offering. **Data integrity:** Reviewers reported no significant bugs that could cause loss or corruption of data. The glitches found in Version 1.0 have been cleaned up, according to PC World.

Multitask support: Distributing an application developed in dBase IV requires the \$250 runtime package. The product handles standard explicit and implicit record-locking.

Performance: Reviewers found the program's speed to be noticeably better in many areas. PC Week attributed this in part to improved indexing procedures. A new SET KEY TO command lets users filter data based on an index expression. Queries can also be automatically optimized with the Index Query Optimizer function, which has the ability to create a temporary index if a one is needed. dBase IV Version 1.5 can reuse in-

dexes and gives the user control of when indexes are to be updated.

The program's speed has not improved in most functions that do not involve indexing, according to PC Magazine. dBase still lags behind some of its competitors in the Xbase market in terms of raw speed.

Application development: Developers can now open up to 40 work areas, a much-needed improvement over the previous limit of 10, reviewers said. Conditional compilation is also possible. A SYSPROC function lets developers define high-level procedures that take precedence over all functions except native dBase commands. Users can also use the SET LIBRARY TO command to specify the order in which procedure libraries are searched. These enhancements are alternatives to the SET PROCEDURE TO method of storing common procedures, PC Magazine said.

Value: The database costs \$795; upgrades from previous versions cost \$99. In the final analysis, reviewers said users will be pleased by what is there but may also be puzzled by what is not. The new version adds useful features without showcasing the technologies Borland will eventually need to add to dBase to keep up with its competitors.

Borland responds

Vince Mendillo, product manager

Ease of use: The mouse support will be consistent within any application developed under dBase IV or III Plus. Then it's also consistent in the way the mouse behaves in the tools, the QBE and throughout the different work surfaces. It's less consistent in the area of the quick key shortcuts. So it's 95% consistent, and I think the critics are overreacting to that other 5%. In the future, you'll see some changes in the user interface in general.

Multitask support: We already support most of the network types, and we're evaluating additional support.

Performance: There are several key areas for the future: the language, the performance as well as injecting object-oriented technology into dBase. The development of this new version started at Ashton-Tate. Then we made additional enhancements we thought were needed. Borland also did the final quality checking. We're very committed to continuing to support dBase on the DOS platform as well as under Windows.

COMING UP

On June 15, Technology Analysis looks at Pilot Executive Software's Lightship for Windows and Channel Computing, Inc.'s Forest and Trees.

dBase IV Version 1.5 offers mouse support and a more open environment for developers but lacks object-oriented technology

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WORKGROUP COMPUTING

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Sun's new line wins user favor

Users pleased with the balance and design of recent batch of workstations

BY MARYFRAN JOHNSON
CW 13147

With the recent introduction of the SPARCStation 10 line, Sun Microsystems, Inc. fired off the first flare in what is expected to be an extended fireworks show of new hardware and software.

Sun is recasting its product line in the image of a new generation of chips, starting with the SuperSPARC Viking from Texas Instruments, Inc.

Analysts are pegging late fall for Sun's next round of hardware, this time based on TI's low-end Tsunami chip for Scalable Processor Architecture

(SPARC)-based laptops, portables and, possibly, palmtop computers.

While critics find fault with the months of delay in bringing the SuperSPARC to market — and the lack of a 50-MHz CPU version until late this year — Sun users seem pleased with the balance and design of this latest crop of workstations.

"If you just go by the numbers, Sun won't win," said Darren Curtis, a systems manager at Battelle, Pacific Northwest Laboratory in Richland, Wash. "But they have consistently stuck with the philosophy of doubling performance with every new re-

vision of the hardware and not raising prices. IBM and Hewlett-Packard don't do that."

Sun's dominant theme in this latest announcement — customer investment protection — is eerily reminiscent of Digital Equipment Corp.'s pitch for its VAX/VMS line.

Yet the notion still has continuing appeal to users, analysts said. "Sun is trying to give confidence that what people buy today will require a lower investment in the future," said Jeffrey Casius, an analyst at Montgomery Securities in San Francisco. The vendor is doing that through a modular design that allows upgrades via plug-in modules to boost CPU performance, disk storage capacity and memory.

Sun is also prepping for the future by outfitting its SPARCstations with multimedia gadgetry such as compact disc-quality 16-bit audio and a microphone as a standard feature.

"Multimedia is probably most important to people developing those kind of applications now," said Curtis, who helps manage Battelle's 200 Sums. "I'm anticipating that in a few years, Sun will have multimedia capabilities on their [low-end workstations]. At that point, you can set up a \$6,000 phone/workstation/teleconferencing station."

The hardware innovations in the SPARCStation 10 lineup do not encompass the lowest prices or the fastest CPU on the market. Rather, they center on features such as a built-in Integrated Services Digital Network

(ISDN) connector or "snap-in" CPUs to grow uniprocessor systems to multiprocessor desktops by early next year.

"I think Sun is showing some very good direction and foresight," said Barbara Kostnick, MIS director at Consumer Health Services, Inc. in Boulder, Colo. "But there is still a lot to be learned about making ISDN work in a commercial environment." She and other commercial users seemed most interest-

mance and double the throughput of the Network File System.

SPARCStation/Server 10's also include the following:

- Multiprocessing expansion with plug-in processor modules, available late this year for a two-processor system and early next year for the four-way model.
- Memory improvements through the largest on-chip caches available currently on reduced instruction set computing (RISC) chips. The SPARCSta-

Product	Model 30	Model 40	Model 50	Model 60
SPARCStation 10	64.2	126.6	100	218
SPARCServer 10	32.9	64.7	100	218
Clock speed	30 MHz	40 MHz	45 MHz	45 MHz
Disk storage	320 to 512M bytes	320 to 512M bytes	640 to 512M bytes	640 to 512M bytes
Disk capacity	424M to 28G bytes (SCSI)	424M to 28G bytes (SCSI)	1G to 28G bytes (SCSI)	1G to 28G bytes (SCSI)
Price	\$18,495	\$24,995	\$28,995	\$37,995

CW Chart Time Machine

ed in the advances Sun is making in the server arena, where Sun has shipped 5,200 of its new SPARCServer 600MP systems in the past six months.

With a \$6,000 board-wrap upgrade to the SuperSPARC chip, customers with older SPARCServer 300 or 400 models would triple database perfor-

mance and double the throughput of the Network File System. The SPARCServer 600MP systems in the past six months.

With a \$6,000 board-wrap upgrade to the SuperSPARC chip, customers with older SPARCServer 300 or 400 models would triple database perfor-

The big transition

The most crucial test point for Sun's success lies ahead with the transition from the current Solaris 1.0 and 1.1 operating systems to Solaris 2.0, which will be introduced this month.

Based on Unix System Laboratories, Inc.'s Unix System V.4, Solaris 2.0 will offer symmetric multiprocessing support, increased network security and simpler system administration. By early 1993, all new SPARC systems will run Solaris 2.0 and its successors — exclusively.

"This will be the biggest software product transition in Sun's history, and they're doing it slow and easy," said David Wu, an analyst at S.G. Warburg, Inc. in New York. "I don't blame them for moving slow. If they screw it up, it would be a big screw-up."

That is precisely why commercial customers such as Consumer Health's MIS director Barbara Kostnick are planning a wait-and-see period for the Solaris 2.0 transition. "We are very cautious when it comes to upgrades. No way will we be the first on the block with a mission-critical application. Until our database vendor, [Sybase, Inc.], confirms that everything behaves well, we won't move."

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Observers wary of IBM FDDI 'alliance'

BY JOANIE M. WEXLER
CFT/STP

IBM and 3Com Corp.'s recent rollouts of aggressively priced Fiber Distributed Data Interface (FDDI) products at the Interop '92 Spring show in Washington, D.C., carry ramifications for industrywide standards and indicate different vendor attitudes toward what would be FDDI users.

The two firms introduced network connections at new price points for both fiber and Type 1 shielded twisted-pair media running FDDI's 100MB bit/sec speeds. The \$1,300 and \$1,600 per-con-

nection copper products conform to an unofficial FDDI standard for Type 1 cabling that is backed by IBM and 10 other industry players.

Despite its copper product's compliance to the group's technology, 3Com has not officially joined the IBM-headed alliance, as it continues to back formal standards committee work toward a shielded and unshielded copper.

While observers support the implementers' alliance for product interoperability, some frown on what they view as an IBM attempt to monopolize the stan-

dards process—in what might not be the best interests of the industry.

IBM acknowledged that it is focusing on its large, Type 1 installed base, which it estimates consists of about 17 million buildings worldwide. However, Category 5 datagram unshielded twisted pair is currently outstripping Type 1 by about 3 to 1, according to Forrester Research, Inc. in Cambridge, Mass., which expects that ratio to jump to more than 3 to 1 in 1994 and more than 4 to 1 in 1995.

In addition, IBM customers "are not the ones investing in FDDI," said Paul Callahan, senior analyst at Forrester. He

said this is because IBM has spent years drilling the concept of Token Ring networking into the heads of its users.

Observers said they fear the IBM-headed alliance could interrupt the standards committee's work should it decide to reexamine the already once-rejected notion of defining a shielded-only scheme. The committee decided instead to construct a dual standard covering both Type 1 and datagram Category 5 unshielded twisted pair to accommodate the growth of Category 5.

"The question is, what is the challenge for the customer if they do shielded FDDI now and then the other standard kicks in?" said Tom Wood, senior industry analyst at Business Research Group, a consultancy in Newton, Mass.

"We've been sensitive not to use the standards committee improperly," said Larry Nicholson, IBM advisory engineer for FDDI development and a member of the committee. "However, we have made

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THE QUESTION IS, what is the challenge for the customer if they do shielded FDDI now and then the other standard kicks in?"

TOM WOOD
BUSINESS RESEARCH
GROUP

this technology available to them."

Unlike 3Com's products, IBM's copper links sport no scrambling technique to guard against peaks of disruptive electromagnetic interference. While this feature is uneeded in the high-quality Type 1 cable, its absence means IBM's links will not be compatible with a formal unshielded/shielded standard, acknowledged Stuart B. Seger, manager of local-area network planning and support at IBM.

"I have a problem with this," said Charlie Robbins, director of communications research at Aberdeen Group, a Boston-based consultancy. "IBM users are business people [who think about product migration]. They don't know what they might inherit cabling-wise through acquisition or other circumstances. IBM has basically said, 'Launch the torpedoes and let's force the unshielded standard to be compatible with us.'"

3Com's design sports the scrambling technique defined in one of two shielded/unshielded proposals now before the committee. The scrambler can be activated or deactivated, depending on what medium is used, explained George Proden, 3Com's FDDI product manager, and will likely render 3Com boards compatible with the dual standard.

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Reassuring, because SuperSPARC is binary compatible with previous generations of SPARC®. It runs the Solaris® operating environment, too, so you can use thousands of existing applications.

And remarkable, because SuperSPARC can handle three instructions at once (most others manage only one or two). Imagine what that does for sheer processing speed.

Now here's where things really start cooking:

We teamed all that horsepower with the extra performance of multiprocessing. One megabyte of SuperCache™ memory. A 320-megabyte-per-second peak memory bandwidth. A 10-megabyte-per-second SCSI disk





controller. And a large I/O buffer for faster Ethernet transfers.

Individually, each of these represents a big step forward in computing performance. But together they produce an astonishing leap ahead in application performance.

And to the person whose hands are on the keyboard, that's the only kind that matters.

Growing up vs. growing old.

Though budgets have never been tighter, most workstations are still designed around the belief that you're willing to replace last year's computer just to work with a newer processor.

The SPARCstation 10 was designed around a different philosophy: Make the processor replaceable, not the workstation.

To that end, we put the processor on a small SPARC module that plugs into the motherboard. As faster chips become available, you can upgrade by pulling out the old card and plugging in a new one.

The rest of your investment — memory, storage, accelerators, everything — is left intact.



10 MB/sec. Disk Input & Output

But don't feel you have to wait around for faster chips. You have the freedom to grow a SPARCstation 10 in plenty of ways right now.

You can start by plugging in a second SPARC module. Since this machine was engineered throughout for symmetric multiprocessing, a second module will nearly double its processing power.



Build-In ISDN Networking

You can also boost its memory to 512 megabytes. And its disk capacity to 26 gigabytes.

There are ports for both parallel and serial devices; connections for thick, thin, or twisted-pair Ethernet; even ISDN connectors for networking over public telephone lines. All built in. Which leaves its five expansion slots available for other functions.

To sum up, we hope you like the way Sun's SPARCstation 10 looks on your desk.

Because it's going to be there quite a while.

The future is not an option.

As innovative as computer companies try to be, they usually can't keep up with what people like you are ready for.

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ing about promising new technologies like multiprocessing? Multimedia? ISDN?

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You've already read how the SPARCstation 10's multiprocessing can speed up the applications you run today. But it also means you can add enough horsepower later to run next-generation software built around multithreading and object management.

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A 16-bit audio chip and external speaker are also included. So applications can use CD-quality sound for e-mail, spoken tutorials, and multimedia presentations.

And there's enough memory, disk space, and bus bandwidth to meet the enormous demands of animation, simulations, and real-time video.

Oh sure, there are plenty of options you can add to this computer.

The future, though, is standard equipment.

Admit it, you're intrigued.

You can't have read this far without feeling at least a twinge of excitement.

Maybe it's for the swift kick-in-the-pants this machine can give to the applications you're already running today.

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Whatever you think, here's what to do:

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It's the first workstation to combine such powerful numbers with such potent ideas.

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SQL Server slips Sybase into NetWare territory

BY JEAN S. BOZMAN
CW STAFF

SAN FRANCISCO — Sybase, Inc. both clarified its relationship with Microsoft Corp. and moved a step closer to Novell, Inc. recently by releasing a version of its SQL Server relational database for users of NetWare 3.11 local-area networks.

Until now, Sybase's only offering for LANs was SQL Server for OS/2, which was designed by Sybase and sold by Microsoft.

Based on Release 4.2 of the Sybase engine, Sybase SQL Server for NetWare was created as a NetWare Loadable Module (NLM) and will function as an intermediary between personal computer-LANs and host databases, said Stewart Schuster, Sybase's vice president of marketing.

The total cost of installing and maintaining the Sybase NLM will be less than that of installing a stand-alone Sybase database server alongside a NetWare LAN, analysts said. "You can save money if you already have a Novell LAN," said Jim Daly, a database administrator at the U.S. House of Representatives

in Washington, D.C.

"People want this [NLM] because it's cheaper for sites that already have a Novell infrastructure," said Donald Feinberg, a software analyst at Gartner Group, Inc. in Stamford, Conn. The license's price is based on the number of users: \$2,000 for a single-user license, \$9,000 for 9 to 16 users and \$30,000 for more than 32 users.

Sybase will continue to work with Microsoft to deliver compatible products for the OS/2 and Windows NT Technology environments. Those products will be sold by Microsoft.

Novell's Newman:
Company will track users' problems

Microsoft said it has no problem with Sybase's decision to sell an NLM version of SQL Server 4.2 as long as Microsoft can continue to sell a similar product for OS/2.

A Microsoft spokesman noted that Sybase's NLM is optimized for the 32-bit NetWare network operating system, not for OS/2.

Some users said they believe the Sybase NLM will save them money. Previously, they had to set up separate Unix LANs to host the Sybase relational database, then install Transmission Control Protocol/Internet Pro-

tool (TCP/IP) links to connect the Sybase server to NetWare. "The NLM makes it pretty easy to get up the database on NetWare," Daly said.

Randy Corbett, a project engineer at Rockwell International Corp.'s Space Division in Downey, Calif., tested the Sybase NLM for four months. He used an Intel Corp. 80386-based PC with 16M bytes of random-access memory and 600M bytes of hard disk storage to support six end users.

"It's got faster processing than SQL Server for OS/2," Corbett said.

Pondered combo

Before this, he considered installing Sybase on the NetWare LAN by combining SQL Server for OS/2 with Novell's Requester for the OS/2. "But that [combination] wouldn't have been able to support as many users as the NLM version," he said.

Prior to the test, the Rockwell LAN had a Unix version of the Sybase server on a separate TCP/IP LAN.

The Sybase NLM will be sold through Sybase's current sales channels, excluding Microsoft, and supported by Sybase.

However, Jan Newman, executive vice president and general manager of Novell's NetWare Systems Group, said users will not have to determine whether problems are caused by the Sybase product or by NetWare. Novell will take responsibility for tracking users' operational problems through its Technical Support Alliance maintenance program.

Traders trim paper step

Smith Barney using client/server architecture

BY JEAN S. BOZMAN
CW STAFF

NEW YORK — Smith Barney is talking about putting a trader's workstation on the desk of every broker in its 98-office organization by 1994.

The investment subsidiary of Primmco Corp., formerly known as Smith Barney, Harris Upham & Co., is using a client/server architecture to distribute the placement of buy or sell orders to the trader's desk. In the past, traders wrote out paper tickets for key entry into a system based on an IBM 3090 mainframe.

That paper step will be eliminated through a link between the RISC System/6000 and the host.

"We are building a system for the sales force," said Richard Witenberg, a managing director at the firm that oversees Smith Barney's administrative services and telecommunications processing.

The current process of placing client orders is "very paper-intensive," Witenberg said. "We are automating that process." Exams will be at least one RS/6000 at each of the firm's branch offices in 30 states and at eight sites in Europe and Asia.

Nightly distribution

"We will take nightly extracts of [mainframe] accounts data, which we will distribute to the RS/6000s for the Sybase database," Witenberg said. Brokers

will be able to combine the customer account data with current stock exchange trading data. They can then view both types of data while talking with clients on the phone.

As planned, the traders would work at IBM Personal System/2 workstations, gathering client profile data and market data from RS/6000 servers. Smith Barney recently bought 150 copies of Sybase, Inc.'s Sybase relational database management system for use on the new generation of RS/6000 servers.

One RS/6000 Model 320 H will support 48 workstations, but higher end RS/6000s could support twice that amount, Witenberg says. The servers will anchor IBM Token Ring local-area networks and connect with the mainframe via IBM's Systems Network Architecture.

Broker applications are being written using Jvarkit, Inc.'s JAM product. The new broker PS/2 Model 35 workstations will set pop-up windows to overlay client information on a stock trading screen, for example. Brokers will also be able to toggle between data screens.

Originally, Smith Barney had planned to use IBM's OS/2 as a database server, but information systems managers here said they felt they would have had to wait the top-of-the-line PS/2 Model 95 to host the applications. Smith Barney said it has 700,000 clients worldwide.

Beyond to ship Windows mail package

BY ROSEMARY HAMILTON
CW STAFF

Beyond, Inc. intends to ship a Microsoft Corp. Windows version of its rules-based electronic mail package by mid-July, a company executive said recently.

The company, which has been marketing a DOS mail package since August 1991, is banking on a theory that some users want an E-mail package with smarts. So far, that theory is proving correct.

"The rules-based approach is exactly what we needed," said Robert Harkens, MIS manager at Cimex Portable Machine Tools in Newburg, Ore. Harkens' firm is evaluating the Beyond Mail software.

Eugene Lee, Beyond's director of product planning, said the company has signed on users who "tend to be downsizing customers . . . who have already built extensions to [their] mail systems and are accustomed to that. They can reproduce that environment with Beyond Mail."

Beyond Mail includes a num-

ber of functions to tailor a mail environment. It allows a user to set up a personal mail system by establishing rules for mail priorities. The system would then automatically sort incoming mail and filter out unnecessary items. Other functions allow a user to set up procedures for corresponding with co-workers. The system would automatically forward certain messages or launch a canned reply to other ones.

These advanced mail features have been promoted by other E-mail providers, including Lotus Development Corp. But, as analysts point out, Beyond is selling these capabilities now.

"I think they've shown with the delivery of products to date that they really understand how to add value [to mail]," said David Whitten, program director of office information systems services at Gartner Group, Inc.

At Kemper Services Co., a division of Kemper Financial Services in Chicago, a prototype application is being built with Beyond Mail for Windows for the marketing group that supports mutual fund sales.

"We want to use Beyond Mail to create an electronic agent," said senior analyst David Markley. "What this will do is monitor the work flow and decide who should get what, when reminders should be sent and at what time responses are considered late."

The final approval for Beyond

I THINK THEY'VE shown with the delivery of products to date that they really understand how to add value [to mail]."

DAVID WHITTEN
GARTNER GROUP

Mail runs on the prototype results. Markley said his staff will be moving to the design phase "within a month or two." While Markley said there were some management concerns about working with a new company, Beyond has "been nothing but great."

"We are aware that the market leaders will probably come out with something similar to

Beyond," he added. Climax is using Beyond Mail for DOS to set up a "closed loop communications" system, Harkens said. In other words, the goal is to not let messages fall through the proverbial cracks. "In order to make our concept work, we needed a lot of rules for communicating electronically," Harkens said. "They only way to do that is to train people. But because Be-

On updates Status Mac

CAMBRIDGE, Mass. — On Technology, Inc. updated its Status Mac recently, adding the ability to remotely update Apple Computer, Inc. Macintosh files and folders.

Status Mac 3.0, which is now shipping, enables network administrators to profile Apple Systems, Inc. PostScript printers as well as individual Macintoshes. By profiling, or doing a remote inventory of a printer's fonts, drivers and other special network managers can avoid walking around to perform such queries.

The same is true for the new remote update feature, which enables managers to remotely update or install software on each user's files and folders. Using store-and-forward technology, Status Mac can do the updating as soon as a Macintosh is turned off, if needed. The software lists for \$749 for 25 users and \$2,699 for a 100-user license.

JIM NASH

Recent Studies 25 MHz Is Now Fast

INGRAM BENCHMARK RESULTS, MARCH 1992 - 25 AND 33 MHz 040 MACINTOSH QUADRAS



*Performance Index is the measured result relative to the slowest machine tested (a 286-based IBM PS/1 running Windows). For example, the Macintosh Quadra 950 is 9.7 times faster than the slowest machine tested.

Ingram Performance Report by Ingram Laboratories, published 3/92. Software programs used in benchmark test were Microsoft® Word®, Excel®, PowerPoint®, Wang® PageMaker®, PenWrite®, and Illustration®. Motorola and the Ⓜ are registered trademarks of Motorola, Inc. Apple and Macintosh are registered trademarks. Macintosh Quadra is a trademark of Apple Computer, Inc. All other brand or product names indicated by ® or TM are registered trademarks.

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SNMP holds steady as network standard

BY ELISABETH HORWITT
ON STAFF

WASHINGTON, D.C. — A slew of Simple Network Management Protocol (SNMP) announcements at the recent Interop '92 Spring conference reinforced SNMP's status as the dominant network management standard.

Out of 200 sites recently sur-

veyed by International Data Corp. in Framingham, Mass., 34% had implemented SNMP-based network management systems, and 51% said they had no formal strategy for implementing the Open Systems Interconnect (OSI) network management standard.

One major reason for users' current lack of enthusiasm for

OSI-based network management is the continuing shortage of commercial products supporting the standard, the report said.

One OSI-based network management platform did emerge at Interop: EyeNode from Digital Analysis Corp. and Data General Corp. However, the platform also supports SNMP.

In addition, OS/EyeNode is said to use the Open Software Foundation's OS/2 as its graphical user interface and SQL as its database access protocol.

OS/EyeNode features an auto discovery tool that automatically creates a map of de-

vices that currently reside on the network. The platform is said to manage remote systems and networks over X.25, Ethernet, Fiber Distributed Data Interface (FDDI) or Token Ring network products. The product is scheduled to ship this fall, running on DG's Arvix or other Unix-based platforms.

Novell, Inc. announced that its LANtorn monitoring and protocol analysis system will now include the SNMP Remote Network Monitoring (Rmon) protocol. Rmon is a recently formalized standard that allows

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Users await NetView 2.3

BY ELISABETH HORWITT
ON STAFF

WHITE PLAINS, N.Y. — Users will have to wait until December to get their hands on IBM's NetView Version 2.3, the vendor announced recently. The product, introduced last fall without a delivery date, provides IBM with multivendor monitoring capabilities on IBM's Graphics Monitor Facility.

Another key Version 2.3 feature is Resource Object Data Manager (RODM), an in-memory data storage utility that is said to track the status of network devices in real time. This in turn will allow users to generate automated applications that, when alerted to a change in a device's status, can take prompt corrective action, IBM said.

This is unlike the older event-driven method of managing devices via NetView, which required an automated application to "go back and check a static database or wait for a message before it can react," said Mary Sest, IBM's strategic planner for network management systems.

The right chemistry
Chemical Banking Corp., an early evaluator of NetView 2.3, sees the new version as being key to its current data center re-engineering and consolidation project, according to Joseph Pechia, a senior vice president of the bank's information and technology management group.

RODM is now an official element of IBM's SystemsView, enabling the platform to perform real-time monitoring of data center systems' status, said Lynn Wilczak, IBM's NetView product manager.

NetView 2.3 will also enable users to monitor and manage non-Systems Network Architecture devices from the Graphics Monitor Facility — OS/2 workstation software that allows users to interact with NetView via a graphical user interface.

Following are the NetView 2.3 enhancements not included in last fall's announcement:

- The ability to manage Ethernet and frame-relay devices.
- The ability to support a virtually unlimited number of consoles.

NetView previously had a limit of 99 consoles.

- A customizable 3270-based interface.
- Faster searching through automation tables that tell an application the right response to a given network situation.

Users pick up pieces to WAN puzzle

At Interop '92 Spring, WAN cost justification a concern for many users

BY JOANIE M. WEXLER
ON STAFF

Cost justification of wide-area networks was on the agenda and on users' minds at the recent Interop '92 Spring conference.

During one conference session, users received the following advice from panelists:

Re-evaluate what you're trying to get done [in your business], have replicated old processes with systems that do that faster," said Ryan James, director of telecommunications research at Boston-based consultancy The Inhouse Group. James also advised users with T1 backbones to maintain them for the next two to four years

while phasing in switched digital services, inverse multiplexing and other bandwidth-on-demand technologies where needed. He said this will tide them over until



Primary Rate (1.5M bit/sec.) Integrated Services Digital Network (ISDN) becomes common in 1995 and broadband ISDN (speeds above 1.5M bit/sec.) kicks in the following year.

On frame-relay technology, James noted that "the flexibility of frame relay to dynamically ramp up or down in speed [to ac-

commodate bursts of traffic] can also be its Achilles' heel. During high-connection periods, from one keystroke to the next, it's hard to guarantee a consistent grade of service to users."

User Ralph Sandridge, who is heading up a "cautious migration" to public frame-relay service to consolidate several parallel networks at Martin Marietta Co., told the group he is concerned about that very issue. To safeguard, he said, he is restricting the initial protocols allowed to traverse the frame-relay network to Transmission Control Protocol/Internet Protocol and Digital Equipment Corp.'s DECnet.

Sandridge said this restric-

tion is so he can keep his eye on congestion patterns before introducing Novell, Inc. IPX and Apple Computer, Inc. AppleTalk local-area network protocols, which he said have characteristics that make them more susceptible to LAN clogs.

Although no formal standards-based carrier announcements have been made, Howard Stern, director of market analysis at Sprint International, said users can start expecting switched virtual frame-relay circuit offerings in the second half of 1993. Unlike permanent circuits, available today, switched offerings do not require users to predefine communications end points, giving them a broader range of connectivity.

Stern said users can expect cell-based Asynchronous Transfer Mode availability at T3 (15M bit/sec.) speeds by mid-1994.

Shoe retailer makes strides with EDI

BY PAUL GILLIN
ON STAFF

CAMBRIDGE, Mass. — Next time you try on a pair of Keds sneakers at Sears, chances are pretty good that electronic data interchange (EDI) got them there.

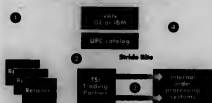
The Stride Rite Corp., the children's footwear giant that makes Keds and Sperry Top-siders, has used the computerized order-taking technology to improve customer relations, streamline shipping operations and boost the quality of data it collects from retail customers.

From a single EDI trading partner two years ago, Stride Rite's EDI operation has grown to include approximately 30 major trading partners. Officials hope to boost that number to 50

by the end of the year.

The payoff? "We have yet to engage in an EDI partnership where business hasn't grown at a double-digit rate in the year immediately following," said Roger W. Monks, senior vice president of manufacturing and operations

Stride Rite's EDI network



How it works:

1. Retail customers send purchase orders in ANSI-standard EDI format to a value-added network (VAN) operated either by General Electric Corp. or IBM. All orders use universal product codes from a catalog on the VAN.
2. Stride Rite's IBM Enterprise System/9000 maintains dial up the VAN every evening and downloads the orders.
3. Order information is formatted for Stride Rite's internal order processing systems using Trading Partner software from TSI International, Inc. in Wilson, Conn. The TSI software "is table and parameter driven with a built-in fourth-generation language," said David Brown, a Stride Rite project manager. "You don't have to write a lot of code to add new features."
4. After the order is filled, invoice data is formatted by TSI's Trading Partner and sent back to the retailer electronically.

Source: Stride Rite Corp.

at the wholesale division of Stride Rite's Children's Group, Inc.

Stride Rite has certainly been doing something right. The company has racked up 27 consec-

Continued on page 56

Product introductions aim to tie it all together

DEC, Cisco plan to develop pair of multiprotocol routers

BY JOANIE M. WEXLER
CW STAFF

WASHINGTON, D.C. — Users of multiprotocol routers from Cisco Systems, Inc. and Digital Equipment Corp. stand to gain next year two low-end options that reportedly will be compatible with both vendors' existing product lines.

The two companies announced at the Interop '92 Spring conference here that they have already invested six months of engineering time in the upcoming, jointly developed multiprotocol products. They are being designed to fit DEC's DECChub 90 wiring hub form factor — about the size of a video-cassette tape.

The routers will be offered by both companies as stand-alone devices or as modules that snap into DEC's wiring hub, company officials said. Pricing and shipping dates were not available, although Ralph Dormitzer, DEC's

group manager of low-end networks and communications, said "the hardware is 70% complete." Pricing will be announced at the end of the year.

The products are slated to support the various protocols necessary to exchange routing table information between routers over Transmission Control Protocol/Internet Protocol and Open Systems Interconnect networks. In addition, the routers will have configuration choices of two serial interfaces plus fractional T1, frame relay and X.25 interfaces, DEC said.

One potential glitch, according to Joseph P. Gottlieb, senior analyst at Meta Group, Inc., a research firm in Westport, Conn., is that users integrating DECChub with the routers will require two management systems.

DEC's HubWatch system for the DECChub 90, Gottlieb said, will not be sufficient for both products. "This is an issue the vendors must iron out."

The routers will be manageable by both Cisco's NetCentral and DEC's Enterprise Management Architecture, according to the vendors.

Analysts deduced that DEC is looking to capitalize on the rich low-end market segment that has taken off with user initiatives to blend small, remote sites into

corporate networks. To date, DEC offers only a high-end multiprotocol router: the DEC Network Integration System 600, which started shipping last month.

However, Gottlieb said, "I don't see DEC as a strategic router player whether or not they grab Cisco. They will fur-

ther confuse their customer base by going outside for additional router technology."

Analysts said Cisco's motive was to gain further access to the DEC customer base as yet another distribution channel and that the move is not likely to represent an official low-end strategy for them.

SNMP holds steady as network standard

CONTINUED FROM PAGE 53

SNMP systems to collect LAN traffic and protocol analysis data from remote monitoring systems.

Novell also announced that LANtium, Rmon included, will now run on NetWare as a NetWare Loadable Module. NetWare servers equipped with Rmon can capture and filter network packets, then send the result to a central, SNMP-based network management system for analysis.

The Rmon feature will enable Novell's NetWare Management System to manage a wider variety of LAN protocols, a Novell spokesman said. The system

currently monitors IPX and Transmission Control Protocol/Internet Protocol. Commercial release of the enhancements is planned by year's end according to Novell.

Other releases

Other SNMP announcements at Interop included the following:

- Standard Microsystems Corp. in Hauppauge, N.Y., announced a system for managing its products from either Cabletron Systems, Inc.'s Spectrum platform or Hewlett-Packard Co.'s OpenView.

- 3Com Corp. announced ViewBuilder/Unix, a software family

that is said to provide integrated, graphics-based management of 3Com's hub, bridge and router products. NetBuilder Management for 3Com bridges and routers is priced at \$1,500 and is available now. LinkBuilder 3GH Management, which manages 3Com FDDI and hub products, is scheduled for availability this month and is priced at \$5,000.

- Peer Networks in Santa Clara, Calif., announced Multi-Management Information Base Agent software that enables nontechnical users to set up an SNMP-based network management system, the company said. The product is available now.

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LANs make way to hub

Another major network operating system vendor and eight suppliers stepped up to the plate to offer network services that run on Ungermaier-Bass, Inc.'s personal computer module for its Accena/One intelligent wiring hub. Microsoft Corp. has succeeded Novell, Inc. in pledging to port its network software — LAN Manager — to UB's module when it ships in August.

Other applications slated to ship for the server module on that day include Lotus Development Corp.'s Notes workgroup package, a LAN analyzer from ProTools and communications and internetworking services from Elcon Technologies, Inc., BT and Olicom U.S.A.

The ability to shift LAN server functions to a centrally managed hub to free server cycles for file-and-print services was introduced by UB, although several hub vendors are expected to follow suit. Several Interop '92 Spring attendees stroked their chins when asked about the scheme, saying they need to learn more about the benefits and implications.

Kapor stresses U.S. network infrastructure

BY JOANIE M. WEXLER
CW STAFF

Mitchell Kapor, president of the Electronic Frontier Foundation and founder of Lotus Development Corp., told attendees in a plenary Interop '92 Spring show address that "I feel the same sense of excitement about wide-area entrepreneurial opportunities with the Internet as I did with personal productivity tools in the '70s."

The Internet is a nationwide educational and research Transmission Control Protocol/Inter-

net Protocol-based network.

Kapor is involved in helping commercialize the Internet to leverage the sprawling infrastructure of digital connectivity.

He said obstacles to maximizing the Internet include the network's heritage and reputation as a scientific tool and the need for the research and business communities to cooperate on

tapping its potential.

In addition, he said, the Internet is currently perceived as a "user-hostile" environment because of its Unix orientation, "but that is fixable with point-and-click graphical user interfaces," he asserted. "The Internet has to leave the nest and learn to fly."

Kapor suggested that the

proliferating Integrated Services Digital Network and cable television infrastructures are also possible copulists for completely uniting the country electronically because they represent other forms of end-to-end digital service.

"Until everyone can play, we can't achieve the full benefits of networking," Kapor said.

Directory services key as mail nets grow

BY JOANIE M. WEXLER
CW STAFF

Hughes Aircraft Co. in Long Beach, Calif., runs myriad minicomputer, mainframe and local-area network mail systems that interconnect through a SoftSwitch, Inc. gateway.

The main challenge in meshing the diverse systems, said Steven H. York, manager of information exchange technologies, is providing users with a quick method of finding the address of a far-flung user on another system.

"When users send mail, they must know what system they're sending to," he explained.

York addressed business managers at a two-day Executive Interop conference for business

managers on messaging integration. In his presentation, he made a plea for the following directory service features from vendors:

- The synchronization of LAN and wide-area network messaging directories.
- Directories that allow users to search by multiple attributes, such as name, department or job function.
- A honing of mainframe and LAN vendor expertise in blending sweeping, multivendor mail environments.
- Better off-the-shelf tools for administration, ongoing maintenance and directory synchronization.
- A standard directory application programming interface for local-area network-based products.
- Migration aids for legacy systems.



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Shoe retailer makes strides with EDI

CONTINUED FROM PAGE 53

tive quarters of increased earnings. During a recessionary 1991, its sales climbed 11%, to \$574 million.

Stride Rite management was skeptical of EDI at first, according to David Brown, a project manager in charge of the technology end of the firm's EDI partnership.

Indeed, EDI has gotten a black eye because some retailers, such as Wal-Mart, Inc. and Kmart Corp., have pressured their suppliers to go to electronic order processing or lose their business [CW, July 9, 1990].

"Some retailers haven't looked at EDI as a trading partnership as much as I've

got a bigger club than you," Brown said.

However, management doubts began to melt after Stride Rite began turning in healthy sales increases to its early trading partners. "The bottom line is we're doing more business without using more resources," Brown said.

Changing business ways

Stride Rite's three divisions — kids' shoes, Keds and Sperry Topiders — are in various stages of EDI implementation. Keds, which does the most business with department stores, is leading the charge with about a dozen trading partners.

Stride Rite also sees EDI's potential to change the way the company does business. With the recession putting the squeeze on retailing margins, department stores have put more pressure on suppliers to deliver products more quickly so that stores can carry less inventory.

"It's survival of the quickest in this industry these days," Monks said.

By taking orders electronically, Stride Rite can generate picking orders at its distribution centers just hours after the order is received.

By the end of the year, the company hopes to add bar-code scanning so that a

load of shoeboxes destined for a customer can be computer-matched against the order to catch discrepancies.

Speedy delivery

All told, EDI-driven changes have enabled Stride Rite to cut turnaround times on shipments from three days to a day and a half. And the company is shooting for same-day service by the end of this year, according to Monks.

EDI's potential does not stop there, according to officials. Stride Rite is testing electronic invoicing and electronic funds transfer in hopes of getting paid faster. Planners also want to start collecting more information from retail customers. For example, EDI can be used to gather point-of-sale information that can tell the shoemaker what is being sold in which stores at what time. That data either is not available on paper or is too bulky to load into the company's financial systems, Brown said. But with EDI, data transfer is a snap.

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The 'Rite' approach

No matter how clean its stockroom, a shoe store's stockroom is usually a jumble of shoeboxes chunked loosely together by size. As a result, shoe store managers typically do not have a complete picture of their inventory, according to Roger W. Monks, a senior vice president at Stride Rite.

Stride Rite is using computer technology and a database of universal product codes (UPC) to change all that. About 50 sales representatives in the kids' shoes and Keds divisions now carry a portable data terminal nicknamed The Rite Approach on sales calls. The terminal consists of an oversized briefcase containing a scanning gun, a handheld terminal and a miniature printer. It was developed by Stride Rite and Symbol Technologies, Inc. and costs about \$2,500.

Sales reps now walk into a retail shoe store and quickly take inventory of Stride Rite products by scanning the shelves with the scanning gun and capturing that information in the handheld terminal. They then plug a phone line into the terminal, which dials up an electronic UPC catalog on a value-added network. The portable printer shoots out an accurate snapshot of the retailer's inventory.

The technology has reduced the time needed to take inventory from eight hours to less than two hours and lets sales representatives write "more intelligent orders," Monks said. The next phase of the project, scheduled to begin in August, will compare the store's stock against an inventory model specified by the retailer and recommend what the retailer should order. Stride Rite also plans to sell the high-tech briefcases to retailers — at cost — later this year.

PAUL GILLEN

=====
A MOTOROLA

LARGE SYSTEMS

HARDWARE • SOFTWARE • STRATEGIES

Tardy IBM looks to tomorrow

BY JOHANNA AMBROSIO
CW STAFF

The axiom "better late than never" took on a new meaning last month, when IBM introduced its automated tape library some five years later than Storage Technology Corp., its major competitor in the storage sector.

Still, IBM executives said they hope to gain a long-term edge with a family of storage systems — disk, tape, optical and whatever else comes down the pike — that work together. In May, the company added a new release of its Data Facility Storage Management Subsystem (DFSMS) software, an optical server that reads data stored on disk and other products to its storage lineup (see chart).

"We want to enable information across an enterprise with ease of use, available on demand, at the right price," said Ray Abu-Zayyad, general manager of Adstar, IBM's storage products subsidiary in San Jose, Calif.

The best way to do that, IBM executives said, is to provide a hierarchy of storage systems that work with IBM and non-IBM computers. IBM said it will allow MVS and VM hosts to back up local-area networks and workstations.

The backup system will support IBM platforms including DOS, OS/2 and the RISC System/6000, as well as Apple Computer, Inc.'s Macintosh, Sun Microsystems, Inc. workstations and Novell, Inc.'s NetWare-based networks.

This marks the first time that IBM has pursued an "open"

strategy in its storage products unit.

At the heart of IBM's storage strategy is intelligent software that allows the system to make an increasing number of decisions — for example, on what medium data should be stored. Programmers and end users would only need to specify what characteristics they desire — whether immediate response time is required, for example.

IBM has started building these kinds of capabilities into its storage software under the rubric of its Systems Managed Storage (SMS) architecture. IBM claims that some 1,500 customers are using SMS software. A recent study by Computer In-

telligence in La Jolla, Calif., said 40% of the 500 customers surveyed have already implemented SMS or are planning to. The remainder have no active plans to do so.

The SMS piece may be what sells the tape library, observers said. Abu-Zayyad said he hopes to sell in the "low hundreds" each year. Gartner Group, Inc. analyst Nick Allen said, "The prospect of integrated software is emotionally attractive." He added, however, that "the low-hanging fruit are gone" and that IBM will have a tough sell.

Abu-Zayyad, for his part, acknowledged that by waiting five years to introduce a tape library, *Continued on page 58*



IBM's new tape library.

D&B to port product line to four Unix platforms

BY KIM S. NASH
CW STAFF

FRAMINGHAM, Mass. — One month after reiterating a year-old plan to revamp its bread-and-butter mainframe software to run in client/server mode, Dun & Bradstreet Software said it will port its product line to four Unix platforms.

The first wave of products is due out by the end of the year. Pricing issues are not finalized, but users can expect to pay "somewhere in the \$30,000 range" to transfer licenses for mainframe software to Unix-

based packages. New Unix applications are expected to cost about 30% less than mainframe applications, said Bobby Cameron, D&B Software's director of strategic and business development.

However, the \$549 million company acknowledged that the majority of its 12,000 customers worldwide — about 60% — are content with mainframe-centric setups. As such, the Unix strategy is aimed at an estimated 20% of the installed base that is currently investigating downsizing.

D&B Software signed joint development deals with Hew-

lett-Packard Co., Digital Equipment Corp., Data General Corp. and ICL to port financial, manufacturing, human resources and other packages to those vendors' versions of Unix.

Where's the beef?

Absent from the list is an IBM AIX port. Paul Cabbage, director of Unix systems at Dataquest, Inc., said this was because IBM has yet to unveil a box "beefy enough" for large business applications.

"Only now are we beginning to see Unix machines with the DASD muscle and file integrity capabilities to handle big business," Cabbage said, pointing to the new boxes recently unveiled by HP (CW, May 4).

Although some users interviewed last week were undecided about moving to Unix, others

applauded D&B Software's announcement.

Liberty National Bank & Trust Co. in Oklahoma City is at the starting line of a seven-year plan to move core applications off an IBM 3090 Model 200E mainframe to a network of Unix-based machines from HP. D&B Software's new enthusiasm for smaller platforms "is critical for us," said Mike Piana, vice president of information systems at the bank, which has \$2.3 billion in assets.

"We're not content with how much the 3090 costs in yearly maintenance, but we're comfortable with D&B and didn't want to change [software] vendors," he said.

Piana said he is unconcerned that D&B Software will not have Unix editions of all his applications out immediately.

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Tool estimates database query costs

BY THOMAS HOFFMAN
OF STAFF

NEW YORK — Information Builders, Inc. recently introduced a software tool designed to help its Focus software users gain an accurate assessment of intelligent query costs required to access information from databases.

SmartMode for Focus uses an embedded artificial intelligence expert engine to predict the resource utilization of Focus requests. Focus is a fourth-generation language for application development. SmartMode for Focus also governs the

execution of database requests and estimates the cost of such inquiries, including the joining of different data fields.

Robert Savette, division manager at Information Builders, said the company began research a few years ago to develop an intelligent query product for its many Focus users who needed such a tool for cost estimates associated with IBM's DB2 database management system. Savette said Information Builders initially "hit a wall" in trying to develop the software but noted that AI enabled the company to break through.

Information Builders also went beyond

its original goal of developing a product for use with DB2. SmartMode for Focus is able to access 54 different data and database structures, such as databases from Oracle Corp., Sybase, Inc., Informix Software, Inc., Computer Associates International, Inc. and Teradata Corp.

Data extrapolation

SmartMode for Focus acquires information about data access patterns by monitoring data traffic and simulating requests. Based on this information, SmartMode for Focus constructs a knowledge base from which to extrapolate

late costs of future requests.

Under SmartMode for Focus, user requests are controlled by a Collector Training System that captures statistics on how requests are processed against heterogeneous data sources.

The SmartMode System Administration Facility interactively builds resource utilization rules. SmartMode's Governor module analyzes each query against predefined rules, predicts resource utilization and accepts or rejects the query.

SmartMode for Focus is being offered as an option to Focus users at prices ranging from \$24,000 to \$39,000. SmartMode for Enterprise Data Access/SQL Release 2.0 was also recently introduced and is immediately available on IBM's MVS and VM platforms.

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Tardy IBM looks to tomorrow

CONTINUED FROM PAGE 57

IBM "missed the market. We screwed up." He maintained, though, that "the market is not over" and that customers have expressed a willingness to adopt a coexistence strategy of using both IBM and Storage Tek libraries.

Another pin, according to Robert Calery, an analyst at Technology Investment Strategies Corp. in Framingham, Mass., is that "no matter how fast the robots go, tape will never be as fast as disk." Nevertheless, tape will be around for a long time, he said.

Whether IBM can capitalize on the tape library market remains to be seen, but in the meantime, there is likely to be one significant benefit for users: price reductions of the automated tape libraries already on the market. "The IBM library users in a new level of competition," Calery said. "Up until now, Storage Tek has had the market just about to itself."

Allen predicted a 10% to 20% price erosion because of competition between IBM and Storage Tek. And he expects other automated tape libraries to be introduced this year by Amperli Corp. and Hitachi Data Systems Corp.

IN BRIEF

Candle, OSF to address DCE

■ Candle Corp. in Los Angeles entered an agreement with the Open Software Foundation (OSF) last month to address the "proof of concept" of the OSF's Distributed Computing Environment application programming interfaces for IBM's MVS.

■ If you're looking for a mortgage to buy a house, your credit worthiness may be decided by a neural network-based application. HNC, Inc. in San Diego formed a group to offer its neural network solutions to mortgage originators, insurers and market investors. This group will be developing products under a platform called the Automated Mortgage Processing System.

Legent holds distribution tool for further testing

BY GARY H. ANTIES
ON STAFF

ORLANDO, Fla. — Legent Corp. told customers at its recent user conference here that they will have to wait a bit longer for its software distribution product, but the firm promised the wait will be worthwhile.

When Legent merged with New York-based Spectrum Concepts, Inc. in January, it decided to hold up the introduction of Spectrum Concepts' new software distribution product,

XCOM/SDS, which was originally planned for a midyear release. Legent said it wanted to test it more thoroughly and integrate it with its Endeavor product line for software management.

Components of XCOM/SDS reside on mainframes, workstations and local-area network servers. Working together, the components prepare packages of software and data for distribution, store the packages on a central "repository," send them electronically to remote sites, install them automatically at speci-

fied times and verify the installations. Bandwidth permitting, XCOM/SDS can update hundreds of network nodes simultaneously.

The product is controlled on the mainframe under VTAM and uses IBM's Systems Application Architecture and Systems Network Architecture-compatible LU6.2 communications technology. It will broadcast software to the major environments, including DOS, IBM's OS/2 and Application System/400, Microsoft Corp.'s Windows and Unix.

XCOM/SDS will be generally available near the end of the year, said Meyer Sheik, director of marketing at Legent's Spectrum Concepts Division. Sheik said XCOM/SDS is being beta-tested now at several

organizations with thousands of LANs and tens of thousands of personal computers, including the U.S. Postal Service. None of the beta-test users would comment on the product, however.

XCOM/SDS is built on top of the XCOM 6.2 product for fast bulk file transfer, introduced by Spectrum Concepts in 1987. To get to XCOM/SDS, the company added a database for keeping information such as the location of target PCs and a Windows-based administrator's workbench for setting distribution schedules and parameters.

Legent is working now to integrate its Endeavor product for software management with XCOM/SDS to allow transparent access to SDS services from Endeavor. The integration will allow software updates developed under Endeavor, with distribution instructions, to be passed easily to SDS, Sheik said.

Sheik also said Legent will enhance XCOM/SDS to include a software and hardware inventory management capability. An-

Weighing the balance

According to a study by Gartner Group, Inc. in Stamford, Conn., only a quarter of the five-year life cycle cost of PC software is accounted for by license and upgrade fees. The balance lies in indirect labor costs, including 17% for distribution and installation. A firm with 3,000 PCs may spend \$30 million on PC software over five years, \$5 million of which is just for getting the software onto the PCs.

But cost is only one problem. "Synchronization is the show stopper. Next-generation systems will require a high degree of synchronization between software updates on server and client platforms. In many instances, a change to the back end will require upgrading thousands of PCs within a few hours."

These factors will lead users to seek automated solutions, the Gartner Group study said. "Client/server computing on a local scale would be impractical without an ability to automatically distribute and install software on every computing platform in the enterprise."

Other enhancements will provide remote diagnostics, such as notification of software that does not receive the intended software.

Help-desk help is on the way

Legent treated user group attendees to a demonstration of a prototype of its Professional Help Desk (PHD) Adviser, an artificial intelligence tool that helps diagnose user system troubles. A knowledge editor and expert system reside on a PC and exchange information with IBM's Information/Management hardware configuration product on a mainframe.

Callers describe problems and indicate their severity and priority. The expert system component on the PC then searches its knowledge base for similar symptoms. It prompts the caller

for additional information and displays possible causes, even those that have been ruled out.

PHD Adviser also outlines recommended actions. In some cases, the user can command PHD Adviser to implement a solution. Nonprogrammers can add to the knowledge base using the knowledge editor. PHD Adviser will be shipped with preloaded knowledge of VTAM printer and terminal problems and solutions, according to Legent. "The product will have limited availability by the end of the year and general availability next year," a spokesman said.

GARY H. ANTIES

Open systems more than Unix, users say

Survey finds most IBM shops pleased with interoperability of status quo

BY TIM NASH
ON STAFF

The state of Oregon runs both an IBM Application System/400 and a Wang Laboratories, Inc. VS Model 7310. However, most mission-critical programs — including the state's innovative purchasing and dial-in project management system — reside on IBM's AIX.

"We're growing the AS/400 for the future, which involves a lot of client/server computing," said Mike Stone, manager of information services for the state. "That machine is open; we won't need Unix for another five years, if even then," he added.

Stone is in good company. A recent report from International Data Corp. (IDC), a Framingham, Mass.-based market research firm, found that 88% of 250 U.S.-based AS/400 and System/36 and 38 sites surveyed said they are not currently pursuing a Unix path, despite the hype surrounding the so-called open systems architecture.

Sixty percent of the respondents said they are satisfied with the openness of their IBM systems, the report said. These stay-out users pegged the

9,000-program portfolio of off-the-shelf applications for IBM's midrange firm and third-party software makers as a big draw.

Jack Belt, branch manager at Pacific Mountain Computer Products, Inc., a used equipment dealer in Union City, Calif., said he has seen just one AS/400 client this year drop the platform for a Unix system. "People talk about the great price/performance ratio of Unix, but used AS/400 prices are coming way down," which gives IBM's proprietary minicomputers an attractive ratio, as well, he said.

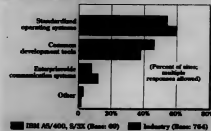
However, one user interviewed last week said he is not pursuing client/server via the AS/400 because the machine is inadequate to function as a server. None of Chicago-based Sara Lee Corp.'s 40 to 50 AS/400 models is approximately a dozen of its 100 independent divisions worldwide are currently used as a server, said Vince Sawyer, vice president of corporate systems.

Even so, he said the firm is studying client/server computing in relation to the AS/400 "very seriously." An IS team is looking into how to use the box in a distributed computing scheme,

but there are no immediate plans to get into client/server on a large scale. Meanwhile, Sara Lee uses IBM miniside Digital Equipment

At the core

Only 69 out of 250 IBM midrange shops surveyed said they are pursuing open systems.



Source: International Data Corp.

Corp. VAXs as servers in the Chicago corporate office.

The VAX "is a naturally more open system, whereas you need SNA to get to an AS/400," Sawyer explained.

He said he is happy that IBM is trying to make the AS/400 more accessible via various gate-

ways to other platforms, but DEC fits more easily into our environment for now."

IDC found that of the 28% of the 250 sites that claimed they are currently implementing an open systems strategy, a significant portion is doing so not through client/server or Unix, but through a unified approach to

puter-aided software engineering tools from competing vendors. Synco Corp., a System Software Associates, Inc. (SSA). The port products subsidiary creates fewer applications in-house than it buys from third parties.

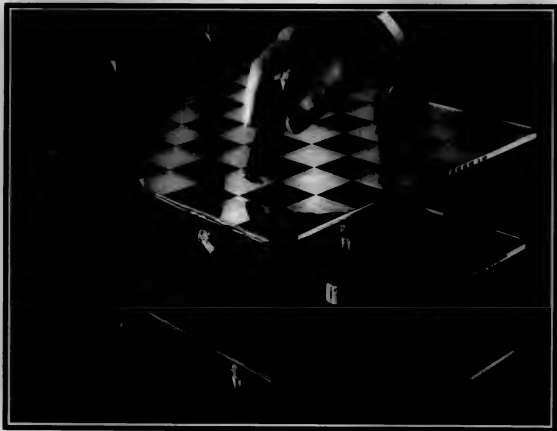
However, "we want what we decide to build to be up quickly and... able to communicate with each other. The way to do that is [by] buying a singular, standard approach," said Ron Seagood, director of information systems. He said price would not be as much of a factor in the decision between Synco and SSA as ease of use and the associated learning curve.

IS budgets at IBM midrange sites are expected to stabilize this year. Nearly half the IDC respondents said they expect no change in total IS spending in 1992. About 40% said they will spend less than this year compared with 1991, while 13% expect to spend less.

One area, in particular, that AS/400 shops are largely shutting their wallets to is personnel. IDC said that a whopping 71% anticipate no change in IS personnel budgets.

Demand this year for AS/400-specific professionals has softened nearly 60%, said Jim Davis, head of William Davis & Associates, a San Francisco-based hiring and recruiting firm. Decreased hiring on the economy.

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Publisher expedites client/server solution

BY GARRY RAY
OF STUDY

New York-based Simon & Schuster, Inc. may be an old-line publishing company, but a new development tool is helping to speed the company's entry into multiplatform, client/server applications.

An operating unit of Paramount Communications, Inc., the \$1.5 billion subsidiary company more than 10 independent business units in four major operating groups, including education, consumer, business and professional and international operations. Its more than 60 imprints include Pocket Books, Brady, Que, Prentice Hall, J. K. Lasser and Betty Crocker.

But Simon & Schuster's business unit structure had caused an increasingly vexing problem, according to technical manager Tom Masciovecchio, who joined the company in 1991.

Traditionally, Simon & Schuster business units have been responsible for their own

information systems, he said. That gave each unit control over its operations but led to inefficiencies. According to Masciovecchio, "People were reinvent-

ON SITE



Simon & Schuster, Inc.
New York

- **Challenger:** Replace isolated finance, production and manufacturing systems with cohesive and unified server-based systems supporting Windows and Macintosh workstations.

- **Strategy:** Implement SQL Server using DEC VAX 4000; develop identical client applications for Macintosh and Windows workstations using Neuro Data's Open Interface development environment.

- **Result:** Open interface reduces client development time from two years to one year; first stage of Publishing Control System is now being launched.

ing the wheel. They were putting resources into solving the same problems." Even

Continued on page 62

IBM vows '92 repository delivery

Big Blue executive outlines '92-'93 project status for key software projects

BY JOHANNA AMBROSIO
OF STUDY

The Repository Manager will be completed this year, an IBM executive promised, with tools that are able to use it rolling out from IBM and third parties this year and next.

Other areas that IBM is working on, the executive said, include the unveiling, later this year, of a defined OfficeVision framework that incorporates third-party tools, "open frameworks" for software for specific industries including manufacturing and finance and continuing development of the DB2 database management system to make it more robust.

"The Information Model will be completed this year," said Earl Wheeler, general manager of IBM's Programming Systems line of business in Somers, N.Y. He made his remarks last month during an interview in New York.

Object definition

The Information Model, a major component of Repository Manager, an architecture, defines the objects that application development tools will use to share information throughout a development project. It is this component that will allow users to mix and match different tools from different vendors.

"This year and next year,

other vendors will enable to the Information Model," Wheeler said.

Kathy Lewis, IBM's marketing manager for application de-



IBM's Wheeler sketches delivery schedule of key projects

velopment, said that IBM "underestimated the work" and that the project was "bigger than we thought." She said IBM and its Repository Manager development partners — vendors that include Bachman Information Systems, Inc. and KnowledgeWare, Inc. — are "frantically working" to complete Repository Manager.

Other areas under development at Programming Systems include the following:

- The formal announcement, later this year, of OfficeVision as an "open architecture" in the model of AD/Cycle, with participation from other vendors. Plans

are to support workstations running AIX, Unix and OS/2 as well as mainframe and local-area networks. The OfficeVision framework will "significantly depend" on Lotus Development Corp.'s Notes and CC-Mail packages, Wheeler said.

- An increasing number of workstation and personal computer-based software tools that mirror or play off mainframe-based software. This year, about 70% of the output of Programming Systems, or some 5 million lines of code, will ship with workstations, Wheeler said. This includes languages, compilers and DBMSs.

- A DBMS that will support 32-bit workstations, including OS/2, AIX and Unix, and will be able to communicate with mainframe and minicomputer DBMSs. This product will ship within 12 months, Wheeler said, and "will be the basis for parallel database processing in the future."

- A new version of DB2 every 18 to 24 months, Wheeler said, with continuing performance boosts and plans to move over some of the technology from IBM's IMS database manager to make DB2 "industrial strength," he said. Also on the agenda is the continuing quest to make DB2 more bug-free.

- Open software frameworks for industry-specific applications including finance, insurance and manufacturing.

In tune

Wheeler said that even though the various IBM business units are more autonomous given the reorganization announced in December 1991, everyone is still singing from the same songbook when it comes to the major software initiatives such as SystemsView, Systems Application Architecture and others.

"The executives from the lines of business choose those things that represent the key architectures, interfaces and structures, and we insist on compliance," Wheeler said. "Inside IBM there is a community of software people that, no matter how we organize, know what parts need to work together or else their products will not provide the value that they should."

Wheeler acknowledged that keeping the choir in tune those days is "a little more difficult than it has been in the past, but he insisted that "we have more discipline to make these products work together than we had a year or two ago."

4GL development tool targets images

BY ELLIS BOOKER
OF STUDY

ORINDA, Calif. — Until now, information systems departments that tailored an electronic imaging system to their own needs have had to rely on development tools from their imaging system vendor or the know-how of outside consultants.

But that will change this month with the debut of a third-party development environment from Image Innovations Solutions, Inc.

The company's Image Application WorkBench is a fourth-generation language (4GL) development tool set for the client/server imaging platform from Plexus Software, Inc., a Santa Clara, Calif.-based company whose imaging technology is the basis for products from several computer vendors, including Amdeco Corp., Digital Equip-

ment Corp., Fujitsu Ltd., Hewlett-Packard Co. and NCR Corp.

Image Innovations' Image Application WorkBench consists of two parts: FinDirector, a database with a set of standard applications for working with and presenting electronic images and FinDeveloper, a set of tools for

USERS DON'T NEED TRW OR Andersen Consulting... They can develop an application themselves."

MARY HAMWAY
NEW SCIENCE ASSOCIATES

developing system requirements, testing design and producing prototypes.

"Users don't need TRW or

Andersen Consulting... They can develop an application themselves," said Mary Hamway, senior analyst at New Science Associates, Inc. in Southport, Conn.

"Our product is aimed at users, not developers," said Image Innovations' president and co-founder, Naren Balakrishnan. Prior to forming the company last year, Balakrishnan was director of business development at TRW Financial Systems, where he was involved in the firm's move into the imaging marketplace.

The Image Application WorkBench "combines a quick prototyping environment with the actual code generation," said Bruce Silver, image services director at BIS Strategic Decisions in Norwell, Mass. But Silver said he believes the

product will first be of interest to systems integrators who are familiar with Plexus rather than users. Some Plexus OEMs might also add the workbench into their imaging products in the future, Silver said.

Plexus officials, meanwhile, blessed the Image Innovations product, calling it "complementary" to their own 4GL, the KDP Application Designer. The two companies also said they plan to make the workbench compatible with the Plexus ImageFlow and Case Management Application offerings.

Claiming that the lack of comprehensive development tools is responsible for the gap in imaging systems and their high cost, Balakrishnan said his workbench will cut development costs by 60%.

The workbench is scheduled for demonstration later this month at the Association for Information and Image Management conference in Anaheim, Calif. Prices have yet to be determined.

Publisher expedites client/server

CONTINUED FROM PAGE 61

worse, he said, "there are places where there is no system at all. They still use paper."

That was the catalyst for Simon & Schuster's Systems and Technology Group to create a single set of applications that would solve generic problems in each of the company's business units. Called the Publishing Control System, the final result will be a series of tightly interwoven applications that will address each of the three stages in a book publishing project: finance, production and manufacturing.

Business units, such as Consumer Publishing and Prentice Hall Computer Publishing, will be free to install the Publishing Control System or to use their traditional systems, Masciovecchio said.

The first component application, a cost-estimating program, will be used by the company's higher education unit beginning in June.

Delivery of this first program would be nearly a year away had the company not used Neuron Data, Inc.'s Open Interface to develop the application, Masciovecchio said.

Open Interface is a graphical programming environment that allows developers to write an application on one platform, generate the required C application code and recompile the application on Apple Computer, Inc.'s Macintosh, Microsoft Corp.'s Windows, IBM's OS/2 Presentation Manager, the Open Software Foundation's Motif and OpenLook platforms.

In modeling the Publishing Control System, the Systems and Technology Group made a number of baseline hardware and software decisions. One decision was that "different people would

have different systems, depending on what they do," Masciovecchio said.

Users in production would have Macintosh systems to do on-line page makeup, while those in finance would use Windows-equipped personal computers. Furthermore, the entire system would revolve around a Digital Equipment Corp. VAX database server running Sysbase, Inc.'s database management system.

Kernel keeps records

Central to the system is a database kernel with "title records" that contain the book title, tracking code, author name and other information needed throughout the publishing process, according to Masciovecchio.

Specifying and developing these database structures and procedures was relatively straightforward, Masciovecchio said. "The most difficult work took place on [Macintosh and Windows-based] client systems," he explained.

Wanting to have all of the applications available to all users, the Systems and Technology Group had at least one false start. One tools vendor that claimed applications portability across Macintosh and Windows platforms "didn't deliver, so we had to backtrack to Open Interface," Masciovecchio said.

Once that had been decided, Masciovecchio's staff of 15 developers wrote the first applications in parallel on PCs and Macintoshes. Portions of each application were distributed among developers and "integrated into a master system the closer we got [to finishing]," he said.

Having cut a year from development time, and with the first element of the Publishing Control System set for imminent launch, Masciovecchio said he hopes Simon & Schuster users will embrace the new technology. Although about 20 people will initially use the cost-estimating program, Masciovecchio predicted that "we'll be going up to 300 [users] within a year."

Further out, Masciovecchio said, another application created with Open Interface, dubbed the Document Management Facility, will integrate project scheduling and electronic document management.

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IN BRIEF

Mac debugger introduced

■ SoftPoint, a debugger aimed at developers of software for Apple Computer, Inc. Macintosh systems, was introduced by Language Systems Corp. in Herndon, Va. The \$295 product conducts more than 50 tests for recurrence validity problems that can cause applications to be incompatible with other software.

■ Sweden's Ericsson Telecom said its Sun XView-based computer-aided software engineering tools will be available on Hewlett-Packard Co.'s HP Apollo 9000 Series 700 workstations. HP-Sweden did the port using Edsac, N.J.-based Unifree Software, Inc.'s XView Toolkit.



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The Great Debate

Monday, June 22, 1992

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PRODUCT SPOTLIGHT

The well-equipped help desk

On the typical help desk, pressures are high while budgets are low. But once you foot the bill for a little automation, the benefits are many.

BY JULIA KING

Fifteen minutes. Make that 15 long minutes. That was the average length of time it would take to put in a phone call to the help desk at Color Tile, Inc. and get a computing problem solved. Maybe get it solved. More often, the employee would be placed on hold and then transferred at least three times among more than a dozen technicians whose reference tools consisted of handwritten manuals and vendors' paper-based documentation. At the end of 15 minutes, most callers still didn't have answers to their questions. And at the end of each month, the help desk had rung up an astronomical telephone bill, such as the \$65,000 bill it received back in February 1991.

That was last year. Today, thanks to an automated help desk system called Expert Advisor from Indianapolis-based Software Artistry, Inc., 80% of employees' problems are resolved on the first call by one member of a streamlined staff of nine help desk operators.

Rather than page through dog-eared manuals, operators stationed at personal computers now access answers to users' queries from a menu or database of common problems, which was developed in-house using expert system capabilities built into the new help desk software. All operators have simultaneous access to the database and to the help desk system, which runs on an IBM Personal System/2. Model 95 local-area network server linked into a Novell, Inc. network.

"Before we automated our help desk, we had 15 highly skilled technicians and trainers doing nothing but answering problem calls from our store personnel," Color Tile project manager Phillip Kulik notes. "It was clear we needed a central information source to route calls, provide information and answer

questions quickly and accurately."

Not all help desks can afford — or need — such a high-end, expert system-based help desk tool. In fact, there is now quite a range of help desk software available, from front-end products that supplement (usually mainframe-based) trouble tracking and management systems already in place; to PC-based products that perform one task such as call logging or call tracking; to more fully functional (usually LAN-based) products that combine these functions with problem resolution; to mainframe-based products that started out as trouble tracking systems and have been expanded to include help desk functionality.

On the mainframe side, many systems originally intended for network and systems management have been expanded to support help desk operations. Some of the main products in this category include IBM's Info Manager, Computer Associates International, Inc.'s CA-Netman and Peregrine Systems, Inc.'s Peregrine Network Management System.

The popular choice
LAN-based products designed specifically for help desks are more popular. Leading products include Answer Computer, Inc.'s Apriori family of products, Ben-Data Management Systems, Inc.'s HEAT: Helpdesk Expert Automation Tool; Magic Solu-

tions, Inc.'s SupportMagic; and Trident Software Co.'s Info-Track.

The important thing, experts say, is to get something — anything — automated on the help desk. The benefits are many: Users get one-stop shopping for answers to their questions; help desk personnel are able to solve problems more effectively; and information systems managers get an ongoing record of user problems and equipment trouble that they can use for future purchases or setting up training programs.

Most companies start with basic needs, which include the following:

- Logging incoming calls.

- Tracking requests through the help cycle.

- Developing a problem management system or comprehensive database of solutions.

On a typical automated help desk, when a call comes in, an operator will log the name of the caller and record the kind of equipment he is using and the exact nature of the problem. This information is automatically stored in a database or logging system.

That database forms the basis of a problem management system, which operators use for background information, such as a history of the caller's problems or records of similar problems and how they were solved.

Most help desk systems allow different types of searches, including key-word search and search retrieval. Hyperport capabilities are also available as part of some automated help desk systems.

What really differentiates one help desk from another is what happens to the information once the operator logs it in. On

Continued on page 66



Steve Tuck

INSIDE

Cost Control

Costs are high, but justifying these costs is easy. Page 67.

Not all Fun and Games

Nintendo turned up the HEAT with automation. Page 68.

Product Guide

A listing of software products to help the help desk. Page 70.

King is a free-lance technology writer based in Kelsey Park, Pa.

Automation benefits help desk

CONTINUED FROM PAGE 65

one side, there are expert systems-based products, most of which rely on either decision-tree logic or rules-based technology to automate problem resolution.

Decision-tree logic often requires an intensive and time-consuming effort on the part of programmers. They write a fixed series of questions that, in actual use, prompt operators for answers and lead them to a resolution. Rules-based technology is somewhat more flexible, but like decision-tree logic, it is not intended for neophytes. Companies set on implementing expert systems technology may want to consider what is called a knowledge-based system.

These systems give programmers a running start by supplying some built-in problem determination procedures geared toward a certain type of equipment or common problems that arise in a particular environment, such as a LAN environment.

Other more user-friendly systems, such as Trident Software's InfoTrak, allow the problem resolution database to be built with free text. Instead of being prompted with programmed questions, the operator searches the database via a variety of parameters, including problem status, machine serial number and technician name.

Expert alternative

Somewhere in between are "case-based reasoning" products. Whereas traditional expert systems rely on structured logic to build a resolution database, case-based reasoning takes a "by example" approach to problem-solving, according to Chuck Williams, executive vice president and chief technical officer at El Segundo, Calif.-based Inference Corp., which offers

CBR Express.

Like other case-based reasoning products, CBR Express' knowledge base consists of examples of actual problems, which are made into "cases" and entered into the system's database by help desk analysts using free English text. "One of the chief benefits of CBR is that help desk

has developed more than 1,000 cases that are "extremely simple" to develop.

On the downside, the product has only limited call tracking and report generation capabilities. Tenaxo programmers had to make up for the product's weaknesses by doing things such as writing an in-house application for statistical reporting.

Technical trade-off

Tenaxo's trade-off is a common one. Consultants emphasize that no help desk system performs all the requisite help desk functions — including call logging and tracking and problem management — equally well.

One product may feature advanced expert systems technology for compiling a database of resolutions but fall short in the kinds of reports it can generate, says Bill Rose, founder and director of the Software Support Professionals Association in San Diego. Another may have a powerful engine for searching a database of problem resolutions but lack an easy-to-master user interface.

The latter can pose a big problem for choosing a system, considering the fact that ease of use is a primary purchase consideration. If the system is hard to use, there's little likelihood that help desk staffers will log every phone call that comes in. Or they'll log them, but the log will be sloppy or inaccurate. If you don't get good information at this crucial first step in the help cycle, you stand little chance of developing a fully functional help desk system.

If you run into the "trade-off" dilemma, there is a way out — through interfaces built into some help desk systems. Some high-end packages, such as Answer Computer's AgriPro and Hammer Technology Partners, Inc.'s Utopia, are actually sold in modules rather than in one comprehensive package, and the modules

are equipped to interface to other systems such as mainframe-based trouble tracking systems that may already be in place.

Since individual modules cost significantly less than complete systems, it also makes available to organizations with limited help desk budgets at least some basic help desk technology.

Interfaces also allow you to leverage your investment in existing systems, such as mainframe-based problem management systems. JC Penney Co.'s Dallas-based help desk coupled an AgriPro problem management module with its in-place IBM system for call tracking, says Karen Shulstad, JC Penney's store systems support manager (see story page 67). Later, when AgriPro announced a call management module, the retail giant was able to swap out the IBM system.

You can also purchase a system that is intended as an interface and nothing else. "Some help desk systems are being positioned as front ends to comprehensive problem management systems already in place," notes David Kaches, a consultant at Systems Management Engineering, Inc. in Tampa, Fla. In these cases, the issue of how straightforward two systems will interface should be at the top of a manager's list of considerations for buying help desk tools.

Interface importance

Interfaces to multiple help desk systems is an important issue. When buying, users will interface should be at the top of a manager's list of considerations for buying help desk tools.

Only after an organization has the basic help desk tools installed and running smoothly should it begin to consider some



analysts can build the cases cheaper than programmers developing them," Williams notes.

That was just the ticket for Julia Johnson, a consultant at Tenaxo Corp.'s Interactive Computing Services in Houston.

Currently, Tenaxo's help desk supports 50 to 75 different hardware and software systems and some 10,000 local and remote users. Because of the mere size and scope of the help desk's user base, Johnson needed an easy way for her staff to build a database of resolutions. The company purchased CBR Express last December and is running it on MicroSoft Corp.'s LAN Manager. During the last five months, Johnson says, her staff

After the dust settles...

If you have some money left in your budget after you've fully implemented the basic call logging and tracking tools, you may want to consider investing in some of the following helpful add-on technologies:

► **Automatic call distributors (ACD).** These are software-based tools that work in conjunction with computerized telephone switching equipment to, among other things, evenly distribute incoming calls among available operators. ACDs also work to enhance a help desk's overall reporting capabilities because they track and store information such as the number of abandoned calls and the length of time a call is left

on hold before it is abandoned. This data helps in identifying staffing needs.

► **Remote access and terminal emulation tools.** These, too, are software-based systems that enable help desk data to dial into other PCs or other systems to see what is happening on a user's screen. The user can be across the hall or across the country.

► **Voice response units (VRU).** VRUs rank high on many managers' lists of useful add-on tools. That is because they enable callers to bypass help desk personnel and instead direct themselves through routine software or hardware usability questions and problems via a menu of keypad options. This frees help desk operators to work on more complex problems such as troubleshooting system bugs or failures. It also enables companies to offer users some level of assistance when the help desk is shut down.

For the time being, "VRUs fall more into the category of bells and whistles," but this is bound to change as computing environments become more complex, says Gretchen Stout, an independent help desk consultant based in St. Paul, Minn. The only alternative, she says, is for companies to increase their help desk staffs as they add new systems and software. ■

JULIA KING

Beyond the borders

Following are some additional vendors of critical help desk tools.

Automatic call distributors

- AT&T Business Communications Systems Bridgewater, N.J. Definity ACD
- Octel Communications Corp. Milpitas, Calif. Aspen
- VIXX, Inc. San Jose, Calif. VIXX 100, VIXX DIAL

Remote access tools

- Ramco Software, Inc. Overland Park, Kan. RobotOperator
- Dynamic Microprocessor Associates, Inc. Huntington, N.Y. PC Anywhere

Voice response units

- Intervoice, Inc. Dallas, Texas. RobotOperator
- SynTelnet, Inc. Phoenix, Ariz. Infobot



of the useful add-on technologies. Add-ons include automatic call distributors, voice response units and remote access software (see story this page).

Looking ahead, analysts say the array of help desk tools will only continue to broaden as users' computing environments grow more and more complex. Just how many help desks are able to implement new systems quickly and effectively remains to be seen.

"People making the buying decisions for help desk tools are up to their eyeballs with real problems and real people, which makes researching what is available a catch-as-catch-can process," says Merra Lee Moffit, president of Knowledge Networks, a San Jose, Calif.-based consultancy. What may prove even more problematic, she says, are the budget constraints many help desks face.

Generally speaking, Moffit says, "support organizations are low on the food chain at most companies."

Software Support Professionals' Rose agrees: "One of help desks' biggest challenges is funding," he says. "Their lot in life is to put out fires, but they have no money." ■

Call in the expert? Not always the best idea

When you are answering more than 500 calls a day from thousands of employees on the front lines at point-of-sales equipment in 1,700 retail stores and catalog centers, speed is of the essence.

But speed is precisely what J.C. Penney Co.'s customized expert systems-based help desk lacked. As new user problems cropped up, it would often take as long as two weeks for applications programmers to "build" much-needed solutions using the advanced technology. Then there was

support manager.

"With Apriori, we don't need a programmer or a super technician to build documents for our database," she adds. Rather, as calls are logged in the Apriori system—a knowledge-based as opposed to expert systems-based technology—creates a central, indexed library of problem management information, which can be referenced by help desk operators in the future.

Not for everyone

Cases such as J.C. Penney's are prompting new questions about the practicality of expert systems technology.

"A lot of organizations see expert systems as some kind of panacea and think it will solve all of their problems," notes David Kuchas, president of Systems Management Engineering, Inc., a Tampa, Fla.-based consultancy. "But expert systems require a fair amount of effort and expertise. If not developed in a very structured way, what a help desk ends up with is a lot of spaghetti," he says.

Expert system technology is also expensive because of the expertise required to write the code, says Bill Rose, director of the San Diego-based Software Support Professionals' Association. Moreover, Rose notes that true experts are hard to find.

The most compelling reason for limited use of expert system technology at the help desk is that in the vast majority of cases, an expert system is not what is needed.

"Perhaps only 10% of calls coming in to the help desk require some kind of expert to answer them," Rose says. The other 90% have to do with the usability of the technology, he says.

JULIA KING



also the cost associated with employing highly-skilled technicians to construct a problem management database.

So, early last year, J.C. Penney scrapped the custom system. In its place, the company installed Answer Computer, Inc.'s Apriori knowledge-based call and problem management modules.

"The biggest problem with the expert system was the time it took and the skill level of the person you needed to use it," explains Karen Shulstad, store systems

Selecting the right tools

Whether you buy software off the shelf, mix and match elements of several packages or build your own system in-house, experts say you should consider the following criteria for help desk tools:

► **Ease of use.** If logging a call is difficult or time-consuming, operators won't do it. Menus and call-up tables prompting the operator for user specifics, such as name and equipment configuration, are especially useful. Also important is the ability to perform key-word searches of problem management databases.

Some products will automatically pop up a screen of the caller's configuration data and call histories. Many allow the operator to choose items from a menu when logging a call rather than typing in problems longhand. This is called "quick entry."

► **Customizability.** No matter how carefully you select a help desk system, no package can meet your every need. Make sure you can easily customize it as well as mix and match tools with standard or custom interfaces. Especially important is whether you can import and export data from homegrown problem management databases and other in-place systems.

► **Training and support.** Operators should be able to give immediate responses without needing to pass along questions to other help desk personnel. To check into the level of training and support provided, ask specific questions such as the following: Is support available around the clock? Is training included as part of a product's purchase price, or is it additional?

JULIA KING

Costs are high but doable

Expenditure depends on help desk size, degree of automation

BY DAVID KUCHAS

Automating your help desk won't be inexpensive. There are ways to control costs, such as being choosy about which portions of the process you automate and purchasing basic software instead of enhanced packages.

And you shouldn't find it difficult to justify the expense, considering that the benefits include decreasing the amount of time it takes to handle a call, increasing the number of calls handled by each help desk representative and improving the ability to report on the various types of problems.

Depending on the size of your help desk, you can expect to spend the following:

► **Roughly \$50,000** for a small help desk with only a few technicians handling fewer than a thousand calls per month.

► **\$200,000** and up for a medium-size help desk with roughly 6 to 12 staffers handling 2,000 to 5,000 calls per month.

► **\$500,000** or more for a large help desk with dozens of support representatives handling over 5,000 calls per month.

Those figures include a number of costs, such as the initial purchase price for the software and hardware, the customization and the training. These can vary in the following ways:

► Number of users

you need to support.

The larger the user base, the more support personnel you'll need and the more sophisticated your support systems will need to be.

► How much you want to auto-

mate. Tools range from basic personal computer software packages for logging, tracking and answering user queries to sophisticated expert- or knowledge-based systems (see story page 65).

Theoretically, your operators could log and track incoming phone calls manually. In that case, your costs will depend on the number of help desk staff members required to handle those calls. However, most organizations find that it is easier and faster to use call logging and tracking software.

Call logging and tracking software packages range in price from approximately \$2,000 for a basic single-user, PC-based system to about \$200,000 for a mainframe-based, multiuser package with many enhancements such as automatic call escalation and notification, interface capability to other complementary products and expert systems support.

On the average, you can expect to invest about \$50,000 for a call logging and tracking package, either PC-based or mainframe-based, to handle most of your help desk's needs.

If your help desk budget allows for more than just the basics, you can pur-

chase add-on help desk tools such as automatic call distributors (ACD) and voice response units (VRU). ACDs start at about \$20,000 for basic call-routing using a couple of agents. You move into the hundreds of thousands of dollars range when you need to support dozens of agents and want advanced capabilities such as test-to-speech and integrated image forms processing.

The same is true for VRUs, which start at about \$15,000 and can cost as much as \$100,000, depending on the system complexity and size of the organization.

► **Customization.** The initial price tag is only part of the cost equation. Even though most packages can be installed as is, many organizations like to customize them to suit their needs. This can be done in-house or with a consultant.

Workstation environments:	\$5,000-\$10,000 (per representative, including PC or terminal, operating system, printer, etc.)
Call-logging software:	\$5,000-\$50,000 (PC LAN) \$25,000-\$200,000 (mainframe)
Automatic call distributors:	\$20,000-\$200,000
Voice response units:	\$15,000-\$100,000
Consulting services:	\$50-\$120 (per hour) (Could total \$10,000-\$200,000)
Personnel:	\$25,000-\$50,000 (per representative, per year)
Maintenance:	\$5,000-\$50,000 (per year)

Source: David Kuchas

Consulting services can range from a low of \$50 an hour to \$120 an hour. You can expect to spend at least 200 hours implementing any of the packages. The cost to accomplish the same thing in-house is probably more like \$20 to \$30 an hour (the average hourly rate of an employee), but keep in mind that you still need to account for training and the possibility of a longer development and/or implementation time frame because of lack of experience.

► **Training.** You need to not only train help on the newly implemented technology but also enlighten data processing personnel, especially when you've installed a global call logging and problem reporting system.

The bottom line is that in order to achieve the benefits of a help desk, you need to invest in automated help desk tools that allow the help desk to do its job right.

If this is achieved, IS will be contributing not only to its own bottom line but also to the bottom line of the business enterprise. ■

Kuchas is an independent consultant based in Tampa, Florida, who specializes in help desk functions and related technology.

No more playing around on Nintendo's help desk

BY LUCIE JUNEAU

It was the old "we must have lost your firm" story. And it was getting pretty old.

Up until a year ago, help desk staff members at Nintendo of America, Inc. would record calls on a paper form and later enter them into a spreadsheet, says Cynthia Wilson, data processing operations manager at the Redmond, Wash.-based computer game manufacturer.

When a problem was too complex to be handled by front-line help desk personnel (which happened 25% of the time), the paper form would be sent to a more experienced IS staffer, who would hopefully find the call, fill out the form and hand it back to the help desk.

"We were trying to be systematic, but it wasn't timely at all," Wilson says. "We would end up with tons of backlogged paperwork... and a lot of problems got lost."

That wasn't the only problem. Because they didn't have easy access to accurate historical data, staff members wasted time repeatedly attending to the same problems rather than resolving them once and for all, Wilson says.

Time to automate

Clarity, automation was in order. After overseeing a five-month product evaluation process, Wilson selected HeatHelpdesk Expert Automation Tool from Bendata Management Systems, Inc. in Colorado Springs.

Nintendo's shop includes seven IBM Application System/400 mini-computers and about 1,000 IBM-compatible personal computers linked to Novell, Inc. local area networks. Because there were very few AS/400 help desk packages on the market at the time, Nintendo's product evaluation team was all but limited to PC-based solutions, Wilson says. The search was further narrowed to DOS-based products because an OS/2 or Unix-based package would have presented a longer learning curve, she says.



Nintendo's Wilson: "We were trying to be systematic, but it wasn't timely at all. We would end up with tons of backlogged paperwork... and a lot of problems got lost."

The evaluation team had a few basic requirements. It was looking for a product that would be easy to use, robust and easy to customize. "We wanted something we could quickly get information into so we wouldn't need to keep customers on the phone a long time," Wilson says. Guide, a package from Owl International, Inc. in Bellevue, Wash., was a system that didn't measure up because it required a programmer to actually use it, and Wilson's staff members aren't professional programmers.

Some products just weren't very robust, Wilson says. In the process of test-

ing one company's solution, which required a dedicated machine, she found it difficult to keep the application up and running. "The engine would lock up and die," Wilson says. Bendata's list run off of a PC file server and doesn't require a separate engine, she adds.

The help desk needed a product whose screens could be customized. It rejected one of the best candidates because the product didn't meet that need, Wilson says. "We have unique information that we wanted to enter about our customers. We needed fields for AS/400 connections, line IDs, what ports they were connected

to selections on his telephone keypad. If the VRU can't resolve a problem, the system will transfer the call to one of the help desk's four systems analysts. This also occurs if all the VRU lines are busy or if the caller prefers to talk with a member of the help desk staff.

Quickier solutions

Tiller sees a lot of benefits to the RobotOperator, which just recently came on-line. The VRU will allow the help desk operators to respond to problems more quickly and will free the staff to focus on more complex user problems, "which aren't as simple as 1, 2, 3 and then you're through," Tiller says.

"It will give us the chance to expand our skills," she adds. With increased knowledge and time to focus on more complex issues, the staff will handle many of the calls that it has traditionally passed along to second-level, non-help-desk information systems personnel.

RobotOperator's logging feature will soon allow the help desk to access users' historical information for determining educational and hardware needs. The help desk will also be able to determine if

there is a lot of information on wiring," Wilson says.

In addition to serving 1,500 users at Nintendo's Redmond site, the help desk serves 120 Nintendo employees working at retail sites and two remote sites: one in North Bend, Ind., and another in Canada. It fields between 1,000 and 3,000 calls per month, depending on seasonal fluctuations, Wilson says.

Most calls to Nintendo's help desk are easy to address. A user might need help resetting a password or have questions about the use of WordPerfect Corp.'s WordPerfect word processing software or Microsoft Corp.'s Excel spreadsheet, Wilson says. Occasionally, a user might call the help desk because a PC has dropped off-line. Typically, a wiring problem is to blame, Wilson says.

Working together

Having an automated system has also made it much easier for the help desk to interface with second-tier personnel. Now, help desk personnel can electronically forward calls requiring second-tier assistance.

Although an expert system capability wasn't among Wilson's requirements, Heat does allow users to build their own expert systems. Nintendo is in the beginning stages of what Wilson estimates will be a five-month effort to build its system. The customized system will include features such as graphics capabilities so that a help desk representative can pull up pictures of equipment when trying to solve a problem. Representatives will also be able to search for problems by key words. It should have previous problems were resolved.

The effort will complement a move to upgrade the help desk by assigning each help desk staff member a specialty area, such as hardware or software, Wilson says. The use of the expert system, along with the move toward specialization, should allow the help desk to cut the number of calls passed to second-tier staffers to about 10% of the total, she adds. *

'If you need to fix a repetitive problem, please press 1...'

BY LUCIE JUNEAU

Last fall, the help desk staff at Schering-Plough Corp. hit upon one of the newest tools in the help desk market: voice response technology.

After reviewing its operations, the Memphis-based pharmaceutical company's help desk determined that about 40% of its calls were repetitive problems and could be addressed by a voice response unit (VRU).

"We kept hearing voice technology was good at handling repetitive problems," says Judy Tiller, manager of corporate support services at Schering-Plough.

After evaluating the available products, Schering-Plough's help desk selected RobotOperator System, a VRU from Dallas-based InterVoice, Inc. The product seemed easier to program and more flexible than other VRUs on the market,

Tiller says. "We felt that it would make it easier for us to add more functions."

Schering-Plough's shop includes an IBM Enterprise System/9000 mainframe, several IBM Application System/400 minicomputers, several Digital Equipment Corp. minicomputers and some Hewlett-Packard Co. mainframes, Tiller says. Most of her help desk clients use IBM-compatible personal computers emulating ES/9000 terminals.

All calls to the help desk are routed through the RobotOperator. The VRU leads the caller through the process of resetting remote job-entry lines and canceling terminal sessions and user identification. Tiller says. Callers can also call the VRU for a live update on system status or to check on the status of a problem that was previously reported.

The caller moves through the VRU's menu of options by making the appropri-

ate selections on his telephone keypad. If the VRU can't resolve a problem, the system will transfer the call to one of the help desk's four systems analysts. This also occurs if all the VRU lines are busy or if the caller prefers to talk with a member of the help desk staff.

Tiller predicts that the help desk will eventually be able to serve about 2,000 calls per month after it is centralized later this year. That's almost double the amount of calls the desk was able to handle before the VRU.

In addition to the VRU, Schering-Plough's help desk makes use of a problem management software package that will eventually be linked to a DB2 database to track calls, Tiller says. This software keeps track of when each call came in, which analyst took the call and whether it has been resolved. The VRU is tied into this software so that the company can track calls coming into its voice response system as well as calls that are handled by its analysts, Tiller says.

So far, the only downside to the technology has been that, because of the amount of programming required by Schering-Plough's application, it has taken on about six months — at least twice as long as expected — to get the VRU up and running. "I would advise others to pad their expectations," Tiller says.

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Tulsa plans ahead for LAN-slide of questions

BY LUCIE JUNEAU

Take a customer base that's expected to grow almost 35% by 1993. Add plans to network that customer base within the same time period, and you end up with one very stressed help desk — unless you provide the right tools.

In Tulsa, Okla.'s public works department, there are currently about 150 personal computer users who need computer support, with about one-sixth of those users on a local-area network. By next year, 200 users will be on PCs, and by 1994, most will be on a LAN, says David Axson, computer support analyst and supervisor of Tulsa's computer support group.

To plan for that day, Tulsa's

for replacing some of the city's older IBM-compatible PCs as well as some nonstandard clone equipment by using statistics collected and organized with the HelpDesk product, Axson says.

Tulsa's four-person support group currently responds to 10 to 12 calls per day from PC users

in 13 buildings scattered over 50 miles in the Greater Tulsa area. Until now, one staff member has been responsible for fielding most user questions and entering data into HelpDesk, which has been installed on a stand-alone PC.

That made ease of use a key

factor pinpoint problems.

The city of Tulsa is now in the process of putting its HelpDesk system on a network server. That means the computer support group's four staffers will be able to use the product simultaneously and share the help desk's work load.

Juneau is a free-lance writer and editor based in Tulsa, Mass.



Axson anticipates easier network implementation with an automated help desk.

computer support group went shopping for a help desk package that could help resolve user problems, run on either a stand-alone or networked PC, manage inventory and provide strong reporting features, Axson says.

Because the computer support group is moving from stand-alone to networked PCs, it needed a product that could make that transition. "We were looking for a stand-alone DOS package that would eventually have the capability of working in a LAN environment when we got to that point," Axson says.

About a year ago, after viewing several product demonstrations, Axson's group selected HelpDesk from Upper Merion, N.J.-based Coastal Technologies. The product helps organize help desk activities by priority and follow-up date. It also maintains a profile of each caller — including the caller's PC configuration and information about previous calls.

The product's reporting capabilities help the support group assess how it spends its time, Axson says. Users can also create reports in various formats. Because the staff has been able to access and format data in relation to calls, the group has succeeded in identifying chronic problems. It has also made a case

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***Expert system capabilities:** Most of these systems rely on either decision tree logic or rules-based technology to automate problem resolution. Programmers usually write a fixed series of questions that prompt operators for answers and lead them to a solution.

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Corporate Software, Inc. (617) 869-7727 Ext. 1347	Control Software	IBM PCs and compatibles	DOS 3.0 or later	Stand-alone	200K/20MB or more	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	Copper 1.1	None	Need, any PC-compatible LAN, any DOS network system	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$8,900 (C) \$25,000 (D) \$12,000 (E) \$10,000 (F) \$10,000 (G) \$10,000 (H) \$10,000 (I) \$10,000 (J) \$10,000 (K) \$10,000 (L) \$10,000 (M) \$10,000 (N) \$10,000 (O) \$10,000 (P) \$10,000 (Q) \$10,000 (R) \$10,000 (S) \$10,000 (T) \$10,000 (U) \$10,000 (V) \$10,000 (W) \$10,000 (X) \$10,000 (Y) \$10,000 (Z)
Enhanced Software Products, Inc. (617) 333-3538	ESP-EL5	Multi-user	MS-DOS 2.0	Stand-alone	N/A/NA	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	None	None	None	User-configurable menu	\$8,900 (C) \$25,000 (D) \$12,000 (E) \$10,000 (F) \$10,000 (G) \$10,000 (H) \$10,000 (I) \$10,000 (J) \$10,000 (K) \$10,000 (L) \$10,000 (M) \$10,000 (N) \$10,000 (O) \$10,000 (P) \$10,000 (Q) \$10,000 (R) \$10,000 (S) \$10,000 (T) \$10,000 (U) \$10,000 (V) \$10,000 (W) \$10,000 (X) \$10,000 (Y) \$10,000 (Z)
Especially Technology Partners, Inc. (415) 360-1300	Chips	IBM PCs and compatibles	Windows 3.0	LAN-based system	640KB	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	C	Cross platform	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$4,700-\$25,000 (depending on number of users and modules)
ESM (606) 436-3333	Problem Management Framework (PMF)	PCs and compatibles	DOS 3.0	Stand-alone or LAN-based	1MB (needs 2MB for PMF) (over 2MB for PMF)	Decision tree logic (graphical)	Yes	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	C	IBM PC-compatible LAN, ESM	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$24,000-\$40,000 (depending on number of users and modules)	
Information Corp. (319) 353-0906	CRM Expert 1.1	IBM PCs and compatibles	Windows 3.0	Stand-alone or LAN-based (not LAN-based)	1MB/5MB	Rule-based reasoning (graphical)	Yes	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	C	IBM PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$1,995-\$5,995 (depending on number of users and modules)	
Information Systems Development Corp. (312) 730-7387 (800) 475-7382	Program Manager (PMG)	IBM CBI or larger	Windows 3.0	Stand-alone, LAN-based	N/A/NA	Rule-based reasoning (graphical)	Yes	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	PC, LAN	Information management	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$37,000-\$45,000
InterApp, Inc. (319) 374-1128	Decision	IBM PCs and compatibles, any machine capable of running Windows 3.0	DOS 3.0 or later, Windows 3.0	Stand-alone	500K/4MB	Rule-based reasoning (graphical)	Yes	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	Basic	Oracle, Informatica, IBM, Microsoft, etc.	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$4,995 (depending on number of users and modules)
Magix Software, Inc. (301) 539-8533	Support Agent	IBM PCs and compatibles, any machine capable of running Windows 3.0	DOS 3.0 or later, Windows 3.0	Stand-alone	675K/11MB	Decision tree logic (graphical)	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	Yes	C	None	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$1,995 (depending on number of users and modules)
MCBS, Inc. (141) 736-6660 (800) 343-3130	Quesing	IBM PCs and compatibles, any machine capable of running Windows 3.0	DOS 3.0 or later, Windows 3.0	Stand-alone	640KB/5MB	Rule-based reasoning (graphical)	Yes	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	Unknown	Oracle, Informatica, IBM, Microsoft, etc.	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$20,000 (depending on number of users and modules)
MOY Computer Consulting, Inc. (415) 333-3333	MOY Helpdesk	IBM PCs and compatibles	DOS 3.0 or later	Stand-alone product	256K/5MB	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	None	None	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$65,000
MultiSoft Software Development Corp. (617) 463-9977	MultiSoft Helpdesk	IBM PCs and compatibles	DOS 3.0 or later	Stand-alone	640KB	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	None	None	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$29,900 (depending on number of users and modules)
Prologix Software (312) 555-8664	Expert Technician	IBM PCs and compatibles	Windows 3.0	Stand-alone	256K/5MB	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	C	None	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$49 (single user), \$219 (multi-user)
Prologix Software (312) 555-8664	Prologix Helpdesk	IBM PCs and compatibles	Windows 3.0	Stand-alone	256K/5MB	None	No	Quick entry/exit path, linkage to client expert information, automatic notification, automatic notification, automatic notification	Search retrieval, key word searching, all fields searchable, automatic notification and prioritization	Detail, summary, all, by graphical, by PC	No	C	None	Need, any PC-compatible LAN	Pre- or during setup, during data entry session, power-on, menu-driven, user configurable menu	\$49 (single user), \$219 (multi-user)

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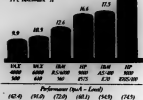
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Layoffs: The aftermath

Suspended projects. Increased stress. More work. Layoffs can leave devastation behind. Three organizations reveal their experiences.

BY MITCH BETTS
OF STAFF

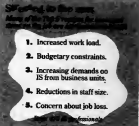
For Steven Katzman, a senior systems programmer at a manufacturer in Bristol, Conn., massive layoffs in the information systems department have meant low morale, high stress and killer hours. Sometimes, he works 60 to 80 hours a week for three weeks in a row with "no time anymore for standing up and stretching a little."

Katzman's experience at Associated Spring — a unit of Barnes Group, Inc. that cut its IS staff by 60% two years ago — is typical of the postlayoff stories told in IS departments across the nation. "We're having to work twice as hard," says a layoff survivor at Bank South Corp. in Atlanta who requested anonymity.

IS managers, rank-and-file employees and consultants agree that IS layoffs produce a heavier work load for the remaining employees, but they can also produce an IS organization that is better at setting priorities — out of necessity — for IS projects.

"There was a time when we could accommodate almost every request that came in here," says Allan K. Stern, director of management information services for the city of Boston. "We're not in that position now" because of a 24% staff cut, he says.

Managers such as Stern and Webb Edwards, the top IS executive at First Interstate Bancorp in Los Angeles, have come up with formal procedures for deciding which IS projects get immediate attention and which can wait. After huge layoffs at First Interstate, Edwards and business managers divided the applications backlog into three categories: must-do projects, projects that could be stretched out and projects that would just have to stay on the back burner.



Other companies have forged ahead with their full slate of IS projects, despite layoffs and perhaps at the risk of burning out their employees. "Dead lines are still being met, and no major projects have been canceled ... but everybody feels frazzled," says Christopher Chert-see, an analyst/programmer at Philadelphia-based Scott Paper Co., which has cut its IS staff 35%.

There is also a risk that layoffs will eventually hurt the software maintenance and quality assurance functions. "In a lot of cases, what gets cut are the things that are, initially, invisible to the user departments," says H. Thaine Lyman, Midwest director of IS consulting at Deloitte & Touche in Chicago.

The cuts are made throughout the behind-the-scenes supporting cast, but "quite often those people are the only ones who understand how these older systems really work," Lyman says. The loss of that kind of knowledge is the biggest postlayoff problem at First Interstate, Edwards says.

"Not many of our shops in the 1980s were good at documentation. We had a lot of people that maintained a lot of that knowledge in their heads," Edwards explains. They may not have been the peak performers, he says, but they knew how to tweak a particular piece of software or hardware to fix a problem.

Can't get no relief

There apparently is not going to be much relief for IS, as many organizations continue to look at ways to trim expenses. Nationwide, layoffs caused by the recession and corporate restructuring contributed to a 48,000-person drop in the number of computer programmers last year, according to the U.S. Bureau of Labor Statistics.

IS layoffs have been particularly heavy in the banking and defense industries, with no end in sight. For example, Chemical Banking Corp. plans to lay off 540 IS employees, and Lockheed Corp. plans to trim 250 from its al-



Hard Times

ready reduced IS staff.

Under this continuing wave of cutbacks, it is likely that only the strong organizations will survive. "The good [IS] organizations tend to get better, and the bad organizations tend to get worse" after layoffs, observes George Rusanak, head of the banking practice at CSC Index, Inc., an IS consultancy based in Cambridge, Mass.

Well-managed IS departments do not panic and cancel all development projects when the layoffs hit, he says, because they have planning and resource-allocation processes in place to help them adjust. These adjustment techniques include the following:

- ▶ Setting new priorities to reduce the demand for IS work.
- ▶ Farming out a resource-intensive portion of the operation.
- ▶ Upgrading development processes and tools to boost programmer productivity.
- ▶ Purchasing off-the-shelf software rather than building an application in-house.

"In a poorly managed organization, they typically tried to solve a problem by throwing bodies at it," Rusanak says. Faced with a reduced body count, these IS shops will find

Continued on page 76

Continued from page 75

themselves muddling through as underachievers, or they will simply "blow up"; that is, management gets replaced or the whole operation is outsourced.

Because the survivors are typically overworked and stressed out, IS managers should undertake a program of "bureaucracy bashing" to relieve some of the pressure, advises Robert A. Zawacki, an IS personnel expert at the University of Colorado in Colorado Springs. That means eliminating unnecessary meetings, reports and layers of approval.

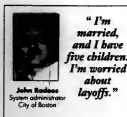
In fact, layoffs often produce a much flatter IS organization and give low-level employees more decision-making authority. "As we de-layer these organizations and cut out an entire layer of [middle] management, it's painful, but in the long run, it's healthy," Zawacki says.

What follows are profiles of three IS organizations that have experienced the trauma and opportunities that accompany major layoffs.

City of Boston

When it comes to budget cutting, taxpayers and politicians tend to spare teachers and police departments and slash anything that smacks of "administrative" services. At Boston City Hall, that means the budget for the IS department has been slashed in half, to \$5.3 million, during the last three years. The IS staff was cut from 125 to 95 during that period, and areas of the office were closed so they didn't look so barren.

But the layoffs could have been much worse, says Allan Stern, who as director of management information services decided to curtail hardware procurements substantially to save staff positions. "We have concentrated on making better use of it," he says. "We need people to support the applications. We're constantly being asked



John Radeos
City administrator
of Boston

"I'm married, and I have five children. I'm worried about layoffs."

to make changes on the fly."

The smaller IS staff has meant setting strict priorities for IS projects: separating the must-haves from the nice-to-haves.

Around budget time, the city agencies and the IS department have a formal process to determine which projects will get some of the scarce funding available. "You have to show a demonstrable cost savings, a public safety benefit or a potential loss if the project is not implemented," Stern explains. "Unless it meets those criteria, you can politically forget it."

Software maintenance is starting to suffer a little, too. Some change orders have had to wait awhile so the staff could deal with the mandatory jobs, such as a change in tax law that requires recalculation of tax bills, Stern says.

The layoffs have resulted in a flatter IS organization, with fewer middle managers in the decision-making process. "Some of the people who in the past needed a lot of direction now have to be trusted to make better decisions on their own," Stern says. "In these times, you find out how deep your talent goes."

The remaining IS work force has had to take on additional responsibilities and kiss specialization good-bye, says John Radeos, a system administrator. Radeos, for example, previously focused on running the department's Wang Laboratories, Inc. minicomputers, but now he is also working with user departments to develop new personal computer-oriented applications and evaluate commercial software packages.

Radeos says the stress of being under-

staffed — and fearing a new round of layoffs — is brutal. "I'm as frazzled and as nervous as you can get. I'm married, and I have five children. I'm worried about layoffs. I have no guarantee that I'm going to be here tomorrow. That's always in the back of your mind," he says.

However, looking at the positive side, Radeos says he is also learning new skills that will be attractive if he does wind up looking for a new job.

Stern says he worries that more cutbacks will hurt the department's ability to handle mission-critical applications, such as those affecting public safety and the payroll for the 20,000 people who still work for the city of Boston.

His worries may not be allayed any time soon, however, because he says it is "very likely" that his department will see more layoffs this year. "We've taken a lot of hits here. You'd like to think that it suffices, but our revenue streams are quite precarious." — *Miché Bels*

Baxter International, Inc.

After the hammer came down on Baxter International, Inc.'s IS staff, morale was low and stress levels were high as workers dealt with changing priorities.

But despite the anguish, remaining and laid-off staff members share knowledge that the layoffs have in general been positive for the Deerfield, Ill., company, bringing its IS workers in sync with the needs of internal systems.

In early 1990, the company's plan was to decentralize and cut corporate staff for a leaner, more responsive organization. To that end, IS ranks at the \$8.9 billion health care manufacturer were trimmed by 20% to approximately 610 people. Half that number were sent into the firm's four divisions, taking along control over applications development.

For longtime staff members, the 1990 layoffs were not the first. They had survived two previous rounds in the IS department during the past nine years. "Morale was a real issue because most of us had been through it before," says Linda Dienberg, whose 12½-year career at Baxter ended in February 1990.

Eleven-year Baxter veteran Mike Purcell, a staff software engineer in the com-

pany's corporate architecture and technology group, says the rules of the 1950s and '60s, when working for a big company meant security, have clearly changed. "There's no question that changes your view of yourself in the larger organization," Purcell says.

The hard facts are that even talent hasn't been a job saver at Baxter. "It was hard to reconcile the fact that this was a premier IS group being told to get rid of 20% of its staff," he says.

Everyone interviewed acknowledges that in the aftermath of the IS cuts there has been an increase in job stress. Because the layoffs came at a time when Baxter's business units were fundamentally rethinking their markets and products, the smaller IS staff had to handle a greater number of requests for system and infrastructure changes.

Still, Purcell and Dienberg say, Baxter handled the layoffs in 1990 as well as could have been expected. Or, as Dienberg puts it, "They got better at it over time."

"Getting 'better'" included doing "things to keep people through the end of the year to give them time to consider their careers once the dust had settled," says Ergin Uslup, vice president of corporate information services. Among other actions, management conducted 600-on-one meetings with employees and created financial incentives to keep key personnel on board.

While the situation hasn't been ideal, there have been positives that have come out of the decentralization and layoffs, IS staff members agree.

Even as some of the IS work load increased, some of it was eliminated. For instance, the formerly centralized function of local-area network and office automation installation and support has been farmed out. A packaged solution replaced an internal effort to revamp the firm's computer-integrated manufacturing system.

Another major project, that of integrating Baxter's IS systems with those of American Hospital Supply Corp., which merged with Baxter in 1985, was stopped. Instead of trying to mesh the systems at the two companies, IS staff is choosing between the two for the best software, system or approach.

But even more important than these lost lighters is the fact that IS employees are more attuned now than they were before the layoffs to the needs and budgetary constraints of the businesses of which they are a part, according to Uslup.

Baxter's Purcell:
Talent not a job saver

Postlayoff cleanup

Consultants and IS executives provided the following tips for managing the postlayoff IS organization:

- Rewrite job descriptions and reorganize job functions to reflect the smaller staff and focus on the "competencies of the future."
- With fewer people, you must pay more attention to planning and resource allocation. Work with business managers to set priorities. Enhance your applications development tools and methodologies to boost productivity.
- Undertake a program of "bureaucracy bashing" to eliminate unnecessary meetings, reports and layers of approval.
- To compensate for the smaller supply of workers, reduce the demand for work. For example, outsource certain parts of the IS operation, undertake joint ventures and purchase commercial software rather than build it.

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The learning process apparently works in the other direction, too. Divisional executives who once asked only why IS projects took so long or cost so much have begun asking "much more in intelligent and relevant questions," Udup says. Some managers, for instance, wondered about overlaps between ASAP, Baxter's ground-breaking order entry system, and other Baxter products that used electronic data interchange (EDI) standards. The software underlying EDI and ASAP has since been unified and made interoperable.

Today, the churn in Baxter's IS staff is lower than it was prior to the restructuring in 1990, and 5% of the original 20% of IS positions cut have been returned to the payroll, primarily in divisions, Udup says. And the layoffs have had no ill effect on projects the company considers important to its future. For example, Purcell is involved in a plan to build a wide-area network to support Baxter's business units and future products. —Ellis Basher

First Interstate Bancorp

There's nothing like a 68% cut in your IS staff to make you focus on what's important and what's not.

Los Angeles-based First Interstate reduced its IS staff from 2,128 to 680 in the last three years, as it collapsed 11 data centers scattered across the Western U.S. into two data centers in Tempe, Ariz., and Portland, Ore.

The bank, plagued by bad real estate loans in California, is undergoing a severe cost-cutting program while at the same time trying to evolve from a hedgehog of banks to a banking company with a common set of products marketed throughout its territory.

The consolidation slashed IS expenses by \$115 million a year, which is helping to put the bank's finances on a more even keel. It also gave Webb Edwards, the executive vice president in charge of the company's information services utility, the opportunity to reorganize the IS operation and focus it on bottom-line results.

Faced with the typical applications backlog and far fewer people, the IS department worked with the executive vice presidents of each line of business to set priorities. "We changed our culture," Edwards says, by allocating resources based on the potential revenue or cost savings of a particular project rather than on which requester had "the loudest voice."

Development projects that were deemed strategic or crucial to daily operations — such as a common suite of deposit systems covering the company — were designated Level A projects. "Those we did not let suffer," Edwards says, even if it meant short-term help from a third-party contractor.

Level B projects were considered necessary but could be spread out over time, such as reengineering automated clearing-house processing. The rest of the backlog gets attention only if there is time and money available, he says.

Since the layoffs and consolidation, the IS organization is not only much more centralized but also much flatter, Edwards says. "When you're keeping the most talented people in the organization, that's the time to push more [decision-making] authority down to lower levels."

For example, project managers who are two or three levels below Edwards now decide how many staff and contractor people should be put on a particular project.

Allowing the technology decisions to be made by the technicians is faster than having to "go up through the management ranks until you find a decision maker," says Wayne Mekjian, a systems development manager.

The postlayoff work load is substantially higher, Mekjian says, but that is partially offset by less bureaucracy and the new "feeling of ownership" over IS projects.

Edwards says the biggest organizational loss from the layoffs has been the loss of technical gurus who had in-depth but undocumented knowledge of particular systems and how to fix them. When those gurus were laid off, people like Mekjian had to start learning the ins and outs of obscure systems to provide technical support.

In the midst of the layoffs and consol-

Four tips for managing cuts

Managing layoffs can be as stressful as going through them. Here's some advice on how to handle layoffs properly:

- Tell the whole staff early and honestly what to expect. Provide a schedule for the layoffs. Recognize that productivity and morale will inevitably suffer in the short term.

Morale problems that affect work occur because most companies sneak up on employees and announce layoffs at the last possible minute. "That causes a tremendous amount of unrest, and it's unfair to the staff," says Michael R. Zucchini, CIO at Fleet/Norstar Financial Group, Inc.

Instead of last-minute layoff announcements, Zucchini's no-nonsense approach is to tell employees very, very early about layoffs; employees at Bank of New England, which Fleet/Norstar

acquired, had as much as 18 months' notice.

- Provide extensive outplacement assistance — not just lip service — as well as severance packages and, if necessary, psychological counseling.

- Avoid across-the-board, indiscriminate layoffs based solely on head count. Try to keep the most talented and productive workers with the skills you'll need in the future.

One advantage to Fleet's 18-month notice, Zucchini says, is that it gave management time to identify the most talented IS staff members at the acquired bank.

- Cut deeply the first time to avoid multiple waves of layoffs. After telling the survivors "you're our team," another round of layoffs destroys management's credibility.

A different beast

Fleet/Norstar
Financial Group, Inc.

Michael R. Zucchini, chief information officer at Fleet/Norstar Financial Group, Inc. in Providence, R.I., maintains that there is a big difference between layoffs caused by consolidating acquired IS operations and layoffs caused by corporate downsizing.

Consolidations, according to Zucchini, do not have the symptoms of understaffing (such as project cancellations and maintenance problems) that occur with corporate downsizing, in which the staff is cut by a certain percentage to reduce expenses.

"We don't kill projects," Zucchini says. "Our [consolidation] strategy allows us to deliver more products and services to the user groups. We lever-

age the staff we have," he adds.

Last year, Fleet/Norstar eliminated 1,500 IS and back-office jobs by establishing a single set of application systems and eliminating more than a dozen data centers in favor of a single one in Albany, N.Y.

Now the company is midway through the process of buying off another 1,500 IS and operations workers inherited from its acquisition of the failed Bank of New England; Fleet/Norstar's total IS staff now stands at about 4,500.

The consolidation strategy has already reduced IS expenses more than 25% by eliminating a lot of duplication in data centers and programming staffs and standardizing all applications software.

"For example, you still need only 25 to 30 people to maintain a deposit system, regardless of the number of banks supported, provided that you've standardized your [financial] products and software," Zucchini says.

MITCH BETTS

edation, the department undertook a total rewrite of the IS job descriptions to make each job more flexible and wide-ranging. For example, instead of having a programmer designated as a "dedicated deposit accounting specialist," the job was lumped

into the generic category of "Level 3 programmer."

With a smaller staff, "you have to have multifunctional people. You just can't have specialists anymore," Edwards says. —Mitch Betts

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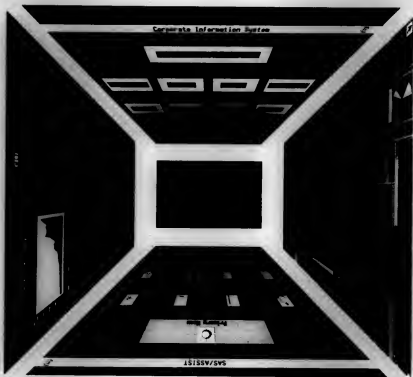


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MANAGER'S JOURNAL

EXECUTIVE TRACK



Sitel Corp. information systems director **Ron Shadelar** has been promoted to vice president of IS and business development at the Omaha-based telemarketing service bureau. The Sitel network consists of 19 facilities operating in five states.

Shadelar has been at the company since 1980.

Nashville-based Berial Corp., international purveyor of writing instruments and related products, has named **John Lui** as vice president of MIS. Lui joined Berial from Cincinnati-based Dracott Co., a subsidiary of Bristol-Myers Squibb Co., where he served as director of information services and senior information officer since 1979.

Mark S. Messagh, previously a senior consultant for information technology at Ernst & Young, has become the first director of information services at Fremont, Calif.-based Paraphernal Land, Inc. (PLI), a manufacturer of storage products for personal computers.

Messagh, whose former posts included a four-year stint in IS at Ask Computer Systems, Inc. (now The Ask Cos.), will help spearhead PLI's planned expansion.

Louis Bimonte, former head of operations and systems for North American corporate finance and real estate at The Chase Manhattan Bank NA in New York, has been promoted to senior vice president of IS. An 18-year Chase IS veteran, Bimonte replaces Craig Goldman, who became the bank's first chief information officer in January.

The Park Ridge, Ill.-based Data Processing Management Association (DPMMA) has a new acting executive director: **Suzanne Littlemore**. An IS professional for 21 years, Littlemore comes to DPMMA from American General Life & Accident in Nashville, where she served as director of information support services.

Just what the doctor ordered

Accountant cures almost all in aiding ailing IS at medical products maker McGraw

BY JIM NASH
CI/ISW

When your corporate growth plans overtake your information systems operations, maybe it's time to call in an accountant. That's what medical products maker McGraw, Inc. did. And while hiring a money man to head up and reshape a flagging IS department may be a bold departure, the medical products manufacturer figures it has made the correct change.

It's getting more than a handful: **Rich Hirshberg**, the former Metwest, Inc. controller hired last year to head up McGraw's IS shop, has reorganized the operation, reorganized its staff and drawn up McGraw's first cohesive IS game plan in years. And two months ago, he outscored one aging but critical leg in the firm's systems trial to Ottawa-based SHL Systemhouse, Inc. (see related story, page 80).

Of course, McGraw is no stranger to change. The company has had more parents than a Hollywood brat.

Shortly after World War II, McGraw Ohio was bought by American Hospital Supply Corp. Baxter International, Inc. swallowed American Hospital in 1985 but was quickly forced to cough up the McGraw division in order to avoid anti-trust allegations.

Colgate-Palmolive Co. bought McGraw, later selling it to health care giant Kendall Co. Barely used to the latest of office stationery, McGraw employees welcomed entrepreneur **James Sweeney's** investor group in October 1990 when it restored McGraw to independence and made Sweeney chief executive officer.

The new guru's first order was to shore up the firm's flagging finances. With that done — McGraw's revenue

rose 17% to \$273 million between 1990 and 1991, and Hirshberg predicts that that figure will double by 1995 — attention turned to IS.

During the acquisition merry-go-round, McGraw's IS operations had fallen by the wayside.

"IS was never really a priority [with previous owners]," says Hirshberg.



Jim Cummings

who inherited a hodgepodge of hardware and software, some of which dated back 20 years.

The systems department was "lobbying for new equipment, but their pleas were falling on deaf ears. [The owners] didn't understand what systems added to the business' bottom line," he says.

The communications gap yawned both ways, according to **Dave Bush**, McGraw's chief operating officer. "We were unhappy with the incumbent [IS director]," he says. "He'd been here too long. He didn't see that he was in a service-oriented department."

One option available to McGraw was

to find an experienced IS executive with an appreciation of business and finance. Instead, the company chose an experienced business and finance executive with an appreciation of technology.

Hirshberg says he was brought in to "bring a business view" to IS. This translated into marrying IS with its constituency without inflating the budget by bringing in new equipment, he says.

"We saw we could become more competitive" if antiquated software and hardware slowed down operations, Bush says. "Our strategic weapon is being a smaller and faster-moving company."

Far from being in fighting trim, however, the firm's IS spread was a sprawl of misadventure software based on three platforms. An aged suite of IBM applications, Hirshberg says, was a particular drain on McGraw's resources.

Perhaps most problematic was what Bush and Hirshberg agree was an outmoded view of technology's potential. Electronic data interchange and other technologies were in place to grease external communications. Internally, however, systems forgot it served users, according to Bush. For example, he says, sales and marketing personnel had difficulty getting information on specific accounts or the market in general.

IS effectiveness was additionally hampered, Hirshberg says, by its organization along departmental lines: manufacturing, sales and such. "One group would be busy, another twiddling its thumbs."

Hirshberg reshuffled the deck to get one generic group of IS professionals before recommending that the IBM

Continued on page 80

A new kid in town

"How does it feel? To be on your own
With no direction known?"

Bob Dylan

For some it would be a nightmare: taking a job with a dark horse company in a field with which you are unfamiliar and whose technology problems have been compounded by years of inattention. That is exactly the situation that accountant **Rich Hirshberg** walked into when he joined McGraw as vice president of IS 18 months ago.

What encouraged him to step off the edge of a secure career into the wilds of an untamed IS situation? "I think I warmed up to the challenge of trying to develop a strategy with the people who are already here," Hirshberg said.

While the department's mission was unclear, its organization was clearly the system themselves alone user-unfriendly, "the people themselves were outstripping," Hirshberg said.

"I wanted people involved in bettering systems and

bettering the company through computers," he said. "One of my pet peeves is having an IS department that sits around in front of computers all day instead of going out to see how we manufacture goods, sell them, market them." As his first priority, Hirshberg brought the staff into the IS game-planning process.

When he realized he would have to outsource all IBM mainframe operations, "I was a little fearful of the employees' reaction," he admitted. In fact, some employees did resist. "IS professionals find great comfort in having their jobs be the same every day," Hirshberg noted.

"They are a very orderly group."

What made resistance the exception rather than the rule, he said, was the company's determination to make employees partners, rather than victims, of the process. Corporate management, which "intended to say yes, agreed that it was best not approved it the same day," made a priority of keeping the department involved, Hirshberg said.

JIM NASH

Re-engineering a cultural, more than technical, challenge

BY NELL MAROLIS
OF FIAP

CAMBRIDGE, Mass.—The consultant often credited with coining the word "re-engineering" has a warning for firms that plan to put his word into action:

"Re-engineering represents massive, holistic, multidimensional change" and is bound to be met with an equally sweeping resistance, said Michael Hammer, president of Hammer and Co. Failure to anticipate and deal with this resistance will doom a re-engineering effort.

"The critical role of the human factors in a re-engineering situation can't be stressed too often," Hammer told the several hundred attendees at his spring Re-engineering Conference late last month. Structural and technological tasks of redrafting your company's entire way of doing business, he said, pale beside the challenge of selling change to change-averse constituencies

within the firm, many of whom are unaware of their subtle sabotage of an initiative they think they support.

"The hard stuff," Hammer said, "is relatively easy; it's the soft stuff that's hard."



Information systems executives can be part of the problem or part of the solution, Hammer pointed out. For those who choose the latter, as well as for their analogs throughout the rest of the company, he spotlighted six key steps to wreaking

a re-engineering effort:

- Be surprised when you encounter resistance to change. Blaming folks for a natural and appropriate response, according to Hammer, is a good first step if you want to go nowhere.

- Assume that a powerful design will engender compliance. "When design and culture clash," Hammer noted, "design loses."

- Hesitate to ruffle feathers. "I don't know the secret of success," Hammer quoted comedienne and undisputed business player Bill Cosby as saying, "But the secret of failure is trying to please everyone."

- Expect everyone to line up behind the plan. See Bill Cosby, above.
- Do not worry about resistance until it rears its head. Change management that does not start on Day 1 is already behind.

- Remember that it's going to be a last day. "Change management must never stop," Hammer said.

Just what the doctor ordered

CONTINUED FROM PAGE 79

operations be outsourced. Under the plan accepted by both company management and IS employees, Hirschberg is negotiating the final points of a three-year, \$4 million contract with Citicorp-based outsourcing and systems integrator SHL Systemhouse. Fourteen McGraw employees who now work with the IBM equipment will take jobs with SHL Systemhouse.

SHL Systemhouse will only handle IBM hardware needs, not software generation or maintenance. Stratus Computer, inc.

based quality control systems, for instance, are specially designed for McGraw and should remain within the company, Hirschberg explains. The DEC installation is being cut back and eventually will be absorbed either by SHL Systemhouse or the Stratus equipment.

"I don't know that anyone in the upper levels looks at IS as a competitive tool," Hirschberg says, but the move in that direction is clear. "They look to me as the person whose job it is to make things work."

Outsourcing prescription

McGraw's recently sealed outsourcing deal with SHL Systemhouse is a model of the pragmatic, user-oriented IS planning that seasoned accountant Rich Hirschberg is attempting to make the work of his IS stewardship. It also typifies the kind of outsourcing contract many analysts and outsourcing providers say will define the next wave in that market niche.

Looks to relinquish control of critical applications to outside specialists and reluctant to bind themselves to 10-year contracts in the face of certain, but certainly unpredictable, economic and technological change, users are turning to shorter term, highly focused deals.

"Businesses that are already hard at work spinning out descriptions of the new format. Meanwhile, according to analysts, commercial firms are equally busy checking it out."

McGraw's agreement, under which SHL Systemhouse will take over an order maintenance-based operation while partnering with McGraw to create applications to run on Stratus workstations, "is very typical of the deals I've seen in the last eight months," said Howard Anderson, president of The Yankee Group, a market research and consulting firm in Boston. Hirschberg "made a fine compromise decision: Systems [in part] was too antiquated to update. So he went out and found a good service company to do the work for him," Anderson said. "It's an appropriate way to behave."

But SHL Systemhouse, Hirschberg noted, was the McGraw bid over several competing outsourcing players on the strength of its stated desire and proven ability to be more than a caretaker for outsourced systems.

"We need to get further ahead in a shorter time than our own internal resources could take us," Hirschberg said. SHL Systemhouse, he said, will lend its open systems-oriented development and systems integration clout to McGraw's growth goals—thence furthering its own.

The ideological systems integration deal is becoming an ingrained trait in outsourcing agreements, Anderson said. "It's The Men Who Came to Dinner all over again. You can get the system up and leave, but here [SHL Systemhouse] is getting the system up and staying."

PC/Communications, Toronto, July 28-30 — Contact: The Interlink Group, Richmond, Mass. (617) 440-8000.

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International Training Conference & Exposition, Anaheim, Calif. (714) 214-2141 — Contact: Russell F. McKinnis, Trade Association, Inc., Redwood, N.J. (201) 446-2110.

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Images World '93, New York, Sept. 21-25 — Contact: Benta Resources, Knowledge Industry Publications, Inc. (914) 333-4157.

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Surviving Remotehosted Offshoring Agreements, Chicago, June 11-12 — Contact: Data Tech Institute, Chicago, Ill. (312) 478-5440.

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The Partnership Conference, Chicago, June 14-17 — Contact: Delta Delta, Life Office Management Association, Morning Drive, Atlanta, Ga. (404) 851-1776.

Current Issues in Managing Information Technology, Cambridge, Mass., June 15-17 — Contact: Center for Information Systems Research, Cambridge, Mass. (617) 252-8927.

Superior '93, Chicago, June 18-18 — Contact: Ben Stiller, S. J. Kruse & Associates, Inc., Bethesda, Md. (301) 968-7400.

Baylink International Conference, San Jose, Calif., June 19-18 — Contact: Knowledge Industry Publications, Inc., West Plains, N.Y. (914) 338-0006.

Shuttle '93, San Jose, Calif., June 17-18 — Contact: Conference Management by Expertise, Inc., Green Point Park, Mich. (313) 952-1824.

The Second Annual Manufacturing Leadership Research, Cambridge, Mass., June 18-18 — Contact: Joe Ray, Management Research, Boston, Mass. (617) 232-3000.

Tactical Week '93, Los Angeles, June 18-20 — Contact: Dave Caplan, Los Angeles Tactical Week Corp., Los Angeles, Calif. (213) 287-5546.

Worldwide World, Boston, June 19-21 — Contact: Digital Consulting, Inc., Andover, Mass. (603) 479-3268.

Leading the Transformation of Information Systems, San Francisco, June 20-21 — Contact: Technology Transfer Institute, Santa Monica, Calif. (310) 394-4500.

JUNE 26-JULY 4

Business World, Boston, June 27-31 — Contact: Digital Consulting, Inc., Andover, Mass. (603) 479-3268.

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JULY 5-11

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See June, July 6-10 — Contact: Joe Press, Indiana Public Relations Group, Merit Park, Calif. (415) 528-4316.

IS Financial Management Annual Conference, San Jose, July 8-10 — Contact: Teresa Quinlan, Financial Management for Data, San Francisco, Calif. (415) 773-0706.

July 12-18

American Association for Artificial Intelligence (AAAI) National Conference, San Jose, Calif., July 12-18 — Contact: Carl Hamilton, AAAI, Menlo Park, Calif. (415) 328-3123.

Software User Documentation Designing for Usability, Boston, July 13-14 — Contact: Digital Equipment Corp., Marlborough, Mass. (603) 787-4910.

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July 19-25

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APICS '93, Chicago, July 22-23 — Contact: APICS Meeting Registration, Palm Beach, Fla. (703) 237-6344.

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BOOK REVIEWS

A personal look at Microsoft's Bill Gates

Hard Drive: Bill Gates and the Making of the Microsoft Empire
By James Wallace and Jim Erickson
John Wiley & Sons, Inc., \$22.95

Few people have cut as broad a swath through the personal computer industry as Microsoft Corp. Chairman Bill Gates. Admired and despised with equal passion, Gates has an uncanny blend of energy, intellect and killer marketing instinct that has made him the richest man in America — worth \$7 billion and counting — and has kept his software behemoth on a gravity-defying climb.



The words of "Chairman Bill," 36, come close to gospel in the computer industry. No one moves without considering the reaction from a man resembling a Coke-guzzling computer nerd who peppers his nasal drone with

the phrases "supercool" and "high bandwidth."

It's a dichotomy that longtime Microsoft observers and *Seattle Post-Intelligencer* reporters James Wallace and Jim Erickson have unearthed with a relish in their engaging new book, *Hard Drive*.

The pair has an indefatigable talent for sleuthing into Gates' past, speaking with hundreds of people from the rumpus chairman himself down to his ex-scoutmaster. The result is a thorough if sometimes disquieting portrait of an obsessive, combative and frequently brilliant businessman who doesn't let anything, least of all friendship, stand in his way.

While *Hard Drive* occasionally gets caught in marveling at the man's jaw-dropping accomplishments, it balances that with an airing of some of Microsoft's dirty laundry. Among other things, the writers claim Microsoft uses its electronic-mail system to spy on employees and that it hired its first two female executives in order to land a lucrative Air Force contract and then treated them badly.

The book also explores Gates' missteps: the failure of OS/2, repeated delays in releasing Windows and the enervating Microsoft has fomented among competitors.

Gates may not be the cutest or funniest person in the computer industry, but in *Hard Drive* he's certainly one of the most fascinating.

JAMES DALY

Technical sampler

Books about computers often get a bad rap as being difficult to understand and overly technical. Here are some recent reference titles that won't frighten you and yours.

• *Voodoo DOS — Tips and Tricks with an Altitude* (by Kay Yarbrough Nelson, Ventana Press, \$19.95) provides a plethora of information on using MS-DOS 5.0 to your best advantage. Icons point out "tips and traps," and topics covered include setting up DOS 5.0, using the DOS shell, creating batch files and managing memory. The casual writing style won't scare away new users, and the book contains enough technical merit that even DOS gurus will

find something new.

• *PC Hotline* (by Dan Gookin, Microsoft Press, \$14.95) is more advanced than *Voodoo DOS*, and it is intended as a reference for keeping PCs up and running as long as possible. Creating emergency disks, avoiding viruses and troubleshooting are all addressed in Gookin's witty style.

• *Unix for the Impatient* (by Paul W. Abraham and Bruce A. Larson, Addison-Wesley Publishing Co., \$29.95), although less fun to read, is useful. It was designed to be a quick reference to the core of Unix commands and provides fast access to the common ones with complete explanations. Unix mavens will find the well-organized index (complete with an alphabetical command

listing) invaluable for doing quick lookups.

• *Danwy Goodman's Macintosh Handbook, Featuring System 7* (by Danwy Goodman and Richard Soud Wurman, Bantam Books, \$29.95) attacks the subject of the highly graphical Macintosh in a highly graphical way. The entire book resembles a Macintosh interface (chapters are marked with a menu bar at the top of the page) and is filled with pictures, screen shots and diagrams. Both hardware and software are covered. Your eyes may have to do a lot of hopping around the pages to find what you're looking for, but the interesting design certainly keeps your attention.

CHRISTOPHER LINDQUIST

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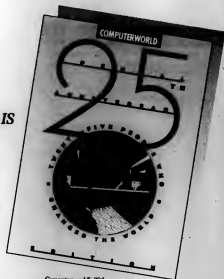
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COMPUTER CAREERS

One small step for end users can be a big boost to your career

BY EMILY LEINFUSS
SPECIAL TO ENR

Putting the end user first could get you a candied apple, or—better yet—a promotion.

Conrad Cross got both. In 1987, he was hired by the city of Orlando, Fla., as a programmer/analyst for midrange computers. Because he had some background and an interest in personal computers, Cross soon noticed that the PCs scattered throughout various departments were drastically underused. His superiors were also becoming aware of this, and when Cross mentioned the problem, they charged him with setting up a formal training program.

Overcoming the resistance of computer-phobic city employees occasionally required some creativity. For example, one older woman who worked for the fire department was sent for training not long before her scheduled retirement; she was, according to Cross, a very unwilling pupil. But he was determined to make her comfortable with computing and hit upon the idea of relating computer directories to the directory

boards in shopping malls. He told her it was just like looking for Macy's in a mall.

"When she retired, she told me she was going to get a PC to write her life story, and she gave me a candied apple," Cross says.

TO MAKE AN older employee comfortable with computing, Conrad Cross related computer directories to the directory boards in shopping malls.

Cross' career payoff came two years later when he was promoted to microcomputer manager. A year after that he was made manager of the entire computer operations department. Cross says his promotions "came directly from that initial step in trying to establish a program that would educate city workers in computing," as well as positive feedback from those workers about the training program.

Going one step further than what's expected is just enlightened self-interest, according to Brian D. Jaffe, manager of end-

user services at Chairol, Inc. in New York. "The more I can do to help the user, the better they feel about me and my staff and the entire IS organization," he says.

One of Jaffe's extras is a monthly newsletter for users. Another is making sure that someone checks back with users who have brought problems to his department to make sure there isn't a recurrence or complication.

Jaffe says he looks for that kind of attitude from his staff and rewards it with "a lunch, a gift, some time off."

For example, when one of his people stayed late recently to meet a "need-this yesterday" request from a user, Jaffe rewarded him with a half-day of bonus vacation time. "It takes a certain type of person to do that, and that is the type of person who will go far," Jaffe adds.

Most IS professionals feel they derive career benefits from taking the service-first tact.

Harvey Shrednick credits his recent promotion to senior vice president of information services at Corning, Inc. in Corning, N.Y., to his remake of IS from a technically oriented, inward-looking organization to an outward, user-to-

cused group. "We have made it very clear that in IS our No. 1 objective is total customer satisfaction," Shrednick says.

There are a number of ways employees are rewarded for achieving that objective. Corning holds quarterly meetings where IS people are lauded in front of their peers for outstanding customer service. In most cases, these service heroes receive cash awards of 3% to 5% of their annual salary. In addition, internal users recognize outstanding IS people—one group named a day in an IS professional's honor.

Occasionally, users write letters to the firm about an IS professional's performance. Shrednick says those letters have been used to justify not only extra compensation, but promotions as well.

"A person who can actually support the business and help change the business will be more effective and can compete better in the job marketplace," says Carl Wilson, senior vice president of MIS at Grand Metropolitan Pillsbury's Grand Metropolitan Food Service and International Retailing Service in Minneapolis.

Wilson's career is his best evidence. He started 26 years ago as a computer operator and has progressed steadily forward ever since, even serving as a business development manager with strategic planning responsibilities.

"The only reason I was able to do that job is because I understood the business," which was a result of serving the end user, Wilson says.

On the other hand, sometimes the best way to serve users is to give them a shove in the right direction. For example, in 1965, John Bjelhand, senior director of Pillsbury Shared Operation Systems, started to push the idea of growing what was then an inconsequential use of electronic data interchange (EDI) to a basic business strategy. At first there was a great deal of resistance among his


end users. "Initially, people couldn't see the value—EDI seemed to be just a reduction of paper as opposed to a re-engineering, integrated process," he says. Now, in 1992, 85% to 90% of all orders are transmitted electronically.

"I really pressed the issue of EDI, and I have personally benefited from it—advancing EDI almost as a religion," Bjelhand says. But he stresses that it takes more than doing one thing right to get ahead. "Promotions, compensation and new challenges come with the capability of envisioning something that can help the business and developing partnerships to go get it done."

Leinfuss is a free-lance writer based in Sarasota, Fla.



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INDUSTRY CURRENTS

Fast food develops appetite for PCs

Computerization drive beefs up restaurant outlets' need for workers with diversified experience

BY JULIA KING
SPECIAL TO CW

I f you think the fast-food industry's information systems shops are places where things are kept simple so they can be served up fast, you're right.

The emphasis in this industry — where technology investment is actually on the upswing — is on designing systems that are easy for restaurant employees to learn and that help improve speed and efficiency.

"In the fast-food restaurant business, there is a very high rate of employee turnover, so we must design systems that are as self-sufficient as we can make them," says Tommy Holt, IS director at TW Services, Inc., a Spartanburg, S.C.-based company that operates 300 Hardee's franchises and owns 21 El Pollo Loco fast-food chicken restaurants.

"We don't have the luxury of designing systems with a long learning curve," he adds.

Full platter

When hiring IS staffers, Peter Hill, vice president of IS at Hardee's Food Systems, Inc. in Rocky Mount, N.C., says he looks for people with experience

in real-time point-of-sale (POS) processing as well as an understanding of the fast-food business.

"We track transactions as they come across the counter in a real-time environment, which is very different and very difficult for some people to understand," Hill explains. "In the mainframe world, you can slow down or stop processing, but you just can't do that in a [POS] environment."

POS experience is also important for Hardee's IS employees because they staff the company's help desk. Restaurant employees call the desk for answers to problems with POS applications. Additionally, the help desk is responsible for testing all new software.

While insider understanding of the fast-food business is certainly desirable, it is not a prerequisite at many fast-food companies. That's because the fast-food industry encompasses a very broad range of applications, many of which use systems that can also be found in other industries.

Because most fast-food companies are directly involved in the groundwork of the industry — buying property for new restaurants, designing, building and equipping the stores; and manu-

facturing, purchasing and shipping food supplies — applications such as construction management, real estate, manufacturing and just-in-time inventory management are often a critical part of the IS job list.

"From a systems standpoint, there is a retail element, a distribution element and a manufacturing element. We need people with experience in all of these areas," says Steve Koyman, MIS director at Sbarro, Inc. in Commack, N.Y.

Large selection

At Arby's, Inc. in Miami Beach, IS director Bonnie Maechler also emphasizes the need for workers with diversified IS experience.

"We have a wide range of groups here, including research and development, a sales group, a construction group and a real estate group, so there's a wide range of users to support," she explains.

With 2,500 stores across the U.S., Arby's IS department also has a very large number of sites to support every day. The IS group at corporate headquarters collects sales and inventory data from all the restaurants. This is why, Maechler says, she is especially interested in candidates who have previous experience with polling applications.

Personal computer experience is in demand throughout the industry right now. Thanks to

falling prices, installation of PCs to perform back-office functions is a major focus of current interest and investment.

At an average cost of about \$6,000 for hardware, software and communications equipment, most fast-food companies can now afford to automate functions such as inventory, payroll, labor scheduling and accounting functions at hundreds — and in some cases, thousands — of individual business units.

At Sbarro, Koyman says he expects to hire at least 10 additional IS staff members to support new PC-based information systems now being installed at the company's 500 Italian restaurant franchises in the U.S. All new PC-based applications for the restaurants will be written in-house.

Hardee's is also in the process of installing PCs in its 1,300 company-owned stores. These systems will be integrated with electronic POS equipment and tied to the company's VAX and IBM environments.

Two Bell Corp., an Irvine, Calif.-based division of Pacific, which recently replaced its 2,000 company-owned restaurants with PCs, currently has at least six

openings for both entry-level and senior programmers and analysts, according to MIS Vice President Susan Cramm. "Our business is growing and all levels of developers are needed," Cramm reports.

Demand for skilled IS workers is expected to continue as more companies make the transition to PC-based store systems and other

FROM A SYSTEMS standpoint, there is a retail element, a distribution element and a manufacturing element. We need people with experience in all of these areas."

STEVE KOYMAN
SBARRO

ers find new ways of applying technology.

Holt predicts that the industry's demand for IS professionals will continue to grow, even after most fast-food companies have PC-based store systems up and running. "With fast food, there are so many opportunities to take advantage of technology," Holt says.

Two examples are the preparation of soft drinks and the control of temperatures for cooking and cooling. "The objective is to automate everything we can," he notes.

King is a freelance technology writer based in Ridley Park, Pa.

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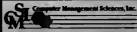
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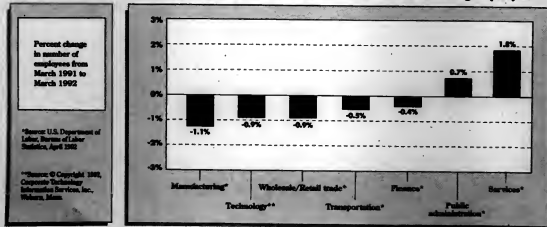
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MARKETPLACE

Negotiating with PC resellers

CHRIS FERRY
SPECIAL TO C W

If nothing to get paranoid about, but you've got to watch your step around personal computer resellers. It takes some fancy footwork to maneuver through all the offerings and avoid potential problems.

Despite the complexity, getting a good deal from resellers is possible and can best be accomplished by understanding how they work their deals and by knowing some of the tricks of the reselling game.

For starters, there are three main ways to buy computer equipment from a reseller: box-to-dock delivery, "a la carte" and bundled services.

In strict price terms, the cheapest deal is box-to-dock. This is a hands-off approach whereby the reseller simply delivers the equipment. The cost for box-to-dock is roughly 6% to 12% more than a reseller's cost and 20% to 35% less than the manufacturer's list price.

It is also a low price compared with other purchase methods. For that reason, most resellers don't recommend it. And on their side, it's also not always the best solution for a company that can-

not or does not want to handle installation and ongoing support.

If you opt for a la carte, you purchase services such as system configuration, shipping, delivery, setup and others on an as-needed basis.

The advantage of this method is you don't pay for anything you can't use. The drawbacks are that it requires buyers to clearly understand end users' needs.

There are also more checks and balances for buyers to tell if they're paying for services that have not been provided.

The most common of these approaches is negotiating a service plan into the package. For most companies, this means systems are delivered, configured and set up for operation. This bundled approach can be less taxing on a company's staff.

At first, the bundled approach may appear to be more expensive; depending on the level of service, you will be charged a 2% to 7% premium on top of the box-to-dock delivery price.

But bundling services often ends up being the most cost-effective approach, largely because resellers are more likely to deal this way and to make it worthwhile for the buyer.

To see if you're getting a good

deal, you should always request prices for both box-to-dock and a bundled service plan to determine the added premium. This may sound simple, but requesting a breakdown of prices is a rare practice for most companies.

Volume benefits

Buyers can often pick up extra services for next to nothing if they've established a relationship with their reseller and they buy in volume.

For example, you can ask the reseller to throw in warranty tracking services — where the reseller keeps track of warranties for equipment at almost no cost. In addition, help desk operations may also be included if the company's buying volume is large enough.

For purchases of \$5,000 to \$10,000 a month, a reseller may set up a toll-free telephone number for end users to call with questions. On higher volumes, resellers may provide outsourcing, where their own employees work at a company's site full time. When negotiating an outsourcing deal with a reseller, a rule of thumb is to expect to need one person per \$500,000 worth of business.

Other negotiables include training, technical support, loaner equipment and even freight expenses.

When choosing a reseller, it's wise to submit a request for proposal to more than one. Also, ask

for references from companies getting similar services. If a reseller balks, you should look elsewhere.

Even after you and the reseller have settled on a price and a plan, you're still entitled to reap the rewards of any price reductions that the manufacturer offers. But there's a catch: Not every reseller will alert purchasers that such a reduction has occurred. Some resellers will give you an updated pricing schedule automatically, but if yours doesn't, ask for one at least every quarter.

Unfortunately, there will always be resellers who do not play by the rules. One common trick they pull is the old "switcharoo": The reseller substitutes a more expensive brand-name memory board or hard drive with a peripheral made by a little-known manufacturer. The reseller can save a

lot of money this way because no-name peripherals cost up to 50% less than their brand-name equivalents.

Substitutions can also interfere with the manufacturer's warranty. For instance, if you send your malfunctioning Personal System/2 to IBM for repairs and the vendor finds a third-party memory board inside, the warranty most likely will not cover the repair.

Most resellers practice good business. However, to make sure you get what you want, the best situation is to develop a long-term relationship with a reseller you trust.

Ferry is the regional vice president of Indianapolis-based Graham McKee Computer Centers and the chairman of the Association of Better Computer Dealers.

Too good to be true

Be wary of huge rebates, price-slashing incentives and other special deals offered by resellers. Something may be brewing under the surface. These offers usually originate with the manufacturer, which may be having a clearance sale on soon-to-be discounted models or be clearing the shelves to make room for a new model. In any case, you should ask your reseller about the reasons behind a manufacturer's rebate.

And here's a word of caution for overzealous bargain hunters: If you constantly haggle resellers down to the bare bones on prices, they may, in turn, be likely to provide you with substandard service.

You may also bite yourself out of services that would have been cheaper if bundled into the original price.

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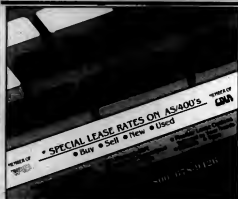
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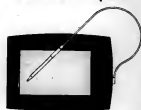
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The BoCoEx index on used computers

Closing prices report for the week ending May 22, 1992

	Closing price	Ask	Bid
IBM AT 338	\$500	\$700	\$250
PS/2 Model 30 286	\$500	\$900	\$300
PS/2 Model 35SX	\$1,325	\$1,500	\$800
PS/2 Model 55SX	\$1,200	\$1,300	\$800
PS/2 Model 60	\$600	\$900	\$325
PS/2 Model P70	\$2,750	\$3,000	\$1,500
PS/2 Model 80	\$1,800	\$1,800	\$1,100
PS/2 Model 95	\$4,200	\$4,600	\$3,300
Compaq Portable II	\$425	\$500	\$375
Portable III	\$350	\$450	\$250
Portable 386	\$1,500	\$1,800	\$1,000
SLT-386	\$700	\$900	\$400
LTE-386	\$850	\$1,000	\$500
Desktop 286E	\$500	\$1,000	\$325
Desktop 386/33	\$1,800	\$2,000	\$1,100
Apple Macintosh Classic	\$875	\$1,050	\$700
SE	\$775	\$875	\$600
IIx	\$2,700	\$3,250	\$2,000
IIcx	\$3,100	\$3,600	\$2,400
IIxqx	\$4,100	\$4,900	\$3,700

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RECOMMENDATION CHANGES

UPGRADED FROM HOLD TO BUY: Sun Microsystems, Inc. (Mabon Securities Corp.). The company's fiscal 1992 earnings estimate remains at \$1.90 per share, but next year's was raised from \$2.25 to \$2.40 per share. Sun's (SUNW) next generation of Scalable Processor Architecture (SPARC) products should accelerate revenue growth. With a \$15,000 base price, the desktop systems are expected to offer twice the performance of current SPARC 2 workstations. The new boxes, based on the supercalar Viking chip from Texas Instruments, Inc., could rival existing products from Hewlett-Packard Co. and IBM.

UPGRADED FROM HOLD TO BUY: Apple Computer, Inc. (Bear, Stearns & Co.). During the balance of the current fiscal year, Apple (AAPL) will be entering the education market with the 68030-based Macintosh LC II. This expansion, along with continued brisk sales of PowerBook notebook computers and a surge in printer sales to non-Apple users, makes Apple stock a good buy right now. There could be a resurgence in earnings momentum in fiscal 1993 from a new product cycle of low-priced, compact ~~dis~~hard-only memory-equipped Macintoshes, file servers and consumer electronics products. New distribution channels are also on the horizon.

INITIAL PUBLIC OFFERINGS

SuperMac Technology, Inc. plans to offer 2.5 million common shares on the NASDAQ exchange, priced between \$10 and \$12 per share, under the symbol SMAC. The 4-year-old Sunnyvale, Calif.-based company makes desktop color graphics boards and large screen displays for Apple Macintoshes. Products range from \$400 to \$3,650 and are sold via 1,300 resellers, distributors and mail-order companies.

Four-year-old Electronic Information Systems, Inc. plans to offer 1.7 million common shares, labeled ESI, for between \$7 and \$9 on the NASDAQ exchange. Based in Stamford, Conn., the firm makes call-processing and automated reporting systems for businesses that rely heavily on telephone campaigns. Product prices range be-

LISA DAVIDSON and KIM S. NASH

Computerworld Friday Stock Ticker

CLOSING PRICES FRIDAY, MAY 25, 1990

TOP PERCENT GAINERS		TOP PERCENT LOSERS		EVEN 50-WEEK RANGE		JULY 28 CLOSING CHANGE		WEEKLY PERCENT CHANGE	
Go Vision	16.38	Immunex Biologics	-21.61	NYSE	7.50	7.50	Computer Associates*	14.70	0.89
Chrysalis Software Inc.	13.88	Eastman Corp.	-21.37	OTC	7.10	10.00	CompuLink Inc.	12.50	-1.30
Central Data Corp.	13.68	Eastman	-15.38	OTC	6.75	10.00	Excel Corp.	34.00	+1.26
Immunex Biologics	13.68	Eastman	-14.19	OTC	15.50	15.50	Immunex Biologics	17.25	-0.25
Immunex Biologics	12.50	Pharmacia Technology	-11.50	OTC	28.50	11.50	Group Software	24.00	+1.90
Immunex Biologics	12.61	Pharmacia	-10.57	OTC	6.43	13.00	Pharmacia Inc.	4.25	0.00
Immunex Biologics	10.70	Pharmacia	-10.50	OTC	6.25	10.25	Immunex Biologics	2.00	-0.50
Immunex Biologics	10.70	Pharmacia	-10.50	OTC	6.00	5.38	Immunex Biologics	2.35	+0.00

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KEY: (B) = New annual high reached in period (L) = New annual low reached in week
* Companies listed in Computerworld Stock Index
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COMPUTER INDUSTRY

IN BRIEF

Novell Q2 profits soar

■ Citing continued strong demand for networking and operating systems products, Novell, Inc. last week posted a second-quarter net income of \$41.3 million, an increase of 40% from the corresponding period in 1991. Revenue was up 50% in the quarter to \$150 million. Growth was spurred by international sales, up 15% from the same period last year, and by Novell's acquisition of Digital Research, Inc., the firm said.

■ Supercomputer maker Alliant Computer Systems Corp. has filed for Chapter 11 bankruptcy protection after a string of losses that left the company with little cash to continue operating. The Littleton, Mass.-based company has halted product development and sales and has cut 75% of its worldwide staff, from 225 to 60 workers. Alliant said it will continue servicing its installed base of 600 while it works with creditors to restructure its operations.

Short takes

■ The California Superior or Court recently confirmed an arbitrator's award to Advanced Micro Devices, Inc. (AMD) in its copyright infringement suit with Intel Corp. Last February, the arbitrator awarded AMD \$15 million and the right to sell its AM386 line of microprocessors. . . . Wang Laboratories, Inc. said it will cut 1,000 employees during the next several months as part of its ongoing effort to slice expenses. . . . Fujitsu Ltd. reported a 36% decline in net profit to \$1.02 billion in its fiscal year ended March 31, on revenue of \$25.86 billion. . . . Hitachi Ltd. posted a profit of \$959 million in the fiscal year ended March 31, a decline of 45% from the same period last year. Sales for the year were flat at \$58.3 billion.

Battered CDC to spin off computer group

BY ELLIS BOOKER
CHICAGO

MINNEAPOLIS — Capping years of struggles, restructurings and divestments, Control Data Corp. (CDC) said last week it would spin off its computer products unit as a separate firm.

The new 3,500-person firm, dubbed Control Data Systems, Inc., will be 10% owned by Silicon Graphics, Inc. in Mountain View, Calif. Tokyo-based NEC Corp. is considering buying 5% of the company, CDC said.

Silicon Graphics has supplied CDC with workstations and servers since 1986. CDC resells NEC's SX-3 supercomputers in North America and Europe.

CDC's remaining businesses will be renamed Ceridian Corp., effective today.

Industry analysts and CDC customers reacted positively to the announcement, noting that CDC's computer business had effectively been separate from its services units for some time. "One of the reasons the company split up is there was very little synergy between the two sides of the business," said Phil Ruppel, a research analyst at Sanford C. Bernstein Co. in New York.

"We think anything they do to make themselves stronger is in users' best interest," said Carolyn Gard, manager of specialized systems support at the University of Georgia in Athens, Ga., and current president of VIM, a CDC user group.

Given that the computer products group already has its

own marketing and sales force, "I don't think this spells much for existing customers," said Bob Kirkman, a past president of VIM and president of Open System Services, Inc., a systems integration services company in Windsor, Conn.

Equity or bust

James E. Ousley, who was named president and chief executive officer of Control Data Systems last week, confirmed that the ability to attract equity investment from the firm's strategic technology partners was a key part of the decision to split the company. "In 1989, when we said we would focus on the



Ousley will now serve as president and CEO for spin-off Control Data Systems.

transition from proprietary to open systems, we knew we would need partnerships, alliances and financing," he said. But these partners resisted equity positions in a technology company that was also a variety of services business, he said.

"Making small equity investments in partners" to cement

The defunct Bunch

A chapter of computer industry history closed last week when CDC's plan to spin off its computer group.

CDC was the very last survivor—at least in name—of what was known as the Bunch companies, a group of five miniframe vendors tolling in the shadow of IBM for nearly 30 years.

But by the mid-1980s, most of the Bunch had faltered, unable to compete in an industry racing toward lower priced, microprocessor-based architectures.

The Bunch was composed of the following firms:

- Burroughs Corp. (merged with Sperry to form Unisys Corp. in 1986).
- Univac (later known as Sperry Corp.).
- NCR Corp. (acquired by AT&T in late 1991).
- CDC.
- Honeywell, Inc. (sold its computer business piecemeal to Group Bull during the late 1980s).

ELLIS BOOKER

Mail-order vendors dodge sales tax shot

BY MITCH BETTS
CHICAGO

WASHINGTON, D.C. — Despite pleas from revenue-hungry states, the U.S. Supreme Court last week decided not to side mail-order vendors to collect sales taxes throughout the country.

The addition of the sales tax would have raised the consumer cost of mail-order personal computers and nearly eliminated the price advantage of the mail-order channel, said analyst Chuck Barney at International Data Corp. in Framingham, Mass.

The Supreme Court, in an 8-to-1 decision, preserved the status quo by reaffirming its 1967

decision that allowed states to impose taxes on out-of-state vendors only if the vendor has a physical presence, such as an office, store or factory, within the state.

Many states, led by North Dakota, wanted the 1967 ruling overturned so that they could start collecting an estimated \$3.2 billion in lost revenue. A North Dakota victory in the case would have forced mail-order computer vendors to collect sales taxes from customers in hundreds of political jurisdictions.

The loose dissent came from Justice Byron R. White, who agreed with North Dakota that the 1967 physical presence test

is outdated at a time when much of interstate commerce is conducted by mail, fax and modem.

The direct-marketing industry applauded last week's majority ruling, but the industry's battle with the states is not over. "The big concern right now is what, if anything, is going to happen in Congress," said Richard J. Leighton, a Washington, D.C., attorney for a coalition of small catalog firms, including several in the computer industry.

The Supreme Court took the unusual step of inviting Congress to tackle the complicated issue and use its constitutional power to regulate interstate commerce. Although legislation on sales taxes is not expected to

pass during this election year, lobbyists on both sides agreed that the states and their business allies will wage a long-term, grass-roots campaign to overturn the Supreme Court ruling.

The impact on large mail-order firms such as Dell Computer Corp. and CompUSA Addi Corp., both in Austin, Texas, would be minimal because they already charge sales tax in most states.

However, the coalition of small catalog firms, which includes companies such as Micro-Prime Software, Inc. in Hunt Valley, Md., and Black Box Corp. in Pittsburgh, argued that collecting taxes throughout the country would be an administrative nightmare for small businesses because each jurisdiction has different rates, rules and exemptions.

Even under its new guise, however, Control Data Systems will face an old and serious task: managing its proprietary hardware systems to lower margin, Unit-based architectures.

In 1992, he said, revenue from open systems platforms would exceed revenue from CDC's proprietary systems. He said the \$130 million restructuring charge taken by the new company would help finance the migration from proprietary to open systems during the next two to three years.

About a third of CDC's computer products group's \$570 million in revenue last year came from maintenance and service for its proprietary Cyber miniframe line. The remainder came from open systems and Cyber sales. About \$1.2 billion in revenue was derived from CDC's services business last year.

CDC said it would take a second-quarter charge of about \$400 million to cover the separation, other restructurings and losses. CDC also said it would capitalize Control Data Systems with \$50 million in cash at the time of the spin-off and another \$45 million in December.

TRENDS

PRICE SLASHING

Heavy discounting is driving down residual values in a very competitive mainframe market

Retail residual value projections

Model	Announced	List price	1/93	1/94	1/95
IBM ES/9021-900	9/90	\$22,818,795	\$11,409,397	\$7,758,390	\$4,363,759
IBM ES/9021-820	9/90	\$16,493,795	\$8,366,998	\$5,278,014	\$3,968,883
Amdehl 5995-6650M**	9/90	\$34,071,544	New*	\$6,499,317	\$3,610,732
Amdehl 5995-6360M**	9/90	\$17,508,625	\$6,690,338	\$4,200,190	\$2,375,861

Projected used retail value
(As percentage of list price)

Model	1/93	1/94	1/95
IBM ES/9021-900	50	34	20
IBM ES/9021-820	50	32	18
Amdehl 5995-6650M**	New*	27	15
Amdehl 5995-6360M**	38	34	13

* The equipment is being marketed by the manufacturer and/or other distributors as new at the manufacturer's list price or at a discount to that list price.

** These Amdehl models do not include the Enhanced Performance Feature.

Source: Technology Investment Strategies Corp., Framingham, Mass.

CW Chart: Michael Higgins

NEXT WEEK

Paul A. Strassmann, ▶ director of defense information at the Pentagon, is working to improve nearly every step the Defense Department takes to procure and use information technology. Strassmann aims to trim annual software costs by more than \$25 billion in 15 years while giving the U.S. a "fight on arrival" capability enabled by computers.



Who's the boss? Not the IS director: "Coach" is a closer description of the evolving role of a firm's IS head, say many of those now in that role. A slew of new tools and the driving of information systems throughout the businesses they serve are converging to turn the CIO into a coach for an expanding team of users. See Manager's Journal.

INSIDE LINES

The name game

▶ Lotus' much discussed Notes-based software distribution and tracking product will not be announced at PC Expo as previously planned, according to a company spokeswoman. Logical delays — such as lining up resellers — will push availability back at least a couple of months. And when the product does arrive, it won't be called Lotus. The name, in all its iterations, has been well-copyrighted by the software industry. So Lotus is holding an internal contest to find a new name, with dinner for two at a favorite restaurant as the prize.

Opening divergent Windows

▶ An API linking Microsoft Windows environments to TCP/IP communications protocols will be announced within the next two weeks by Microsoft, Novell, Sun and other vendors, a Novell spokeswoman said. Dubbed WinSock, the specification represents another alternative to Novell's LAN Manager for DOS — NetWare server software that provides DOS and Windows 3.0 users with direct access to a broad range of dissimilar computing resources using TCP/IP.

Here today, gone tomorrow?

▶ IBM's deal to buy some or all of Parallel can be disclosed as early as tomorrow, sources close to both companies say. The venture capitalists who funded Parallel will no doubt breathe a sigh of relief. "It was completely within the realm of the VCs," one source said. While the deal initially was for IBM to buy only a piece of Parallel, the supervisor maker may in fact cease to exist as an independent company. One source at IBM said, "They don't have a product line anymore — it's our product line now."

Chips aboy

▶ IBM's H-Pil Filips told analysts and commentators last week that the Power PC platform is ahead of schedule, with low-end products due by year's end. He added that by 1995, IBM expects 90% of the servers it sells to be based on the Power PC chip. Representatives from Motorola say they expect to use 0.5-micron technology and 8-in. wafers — "bleeding-edge" chip-building technology — to make the chips in a Texas plant.

Blended appliances

▶ IBM and Apple are working on putting support for AppleTalk networks on OS/2, according to an IBM insider involved with the pair's joint development partnership announced last summer. Doing so will "make the PS/2 a file and print server for the Mac," the source explained, and will preserve user access to the power and ease of use of Macintoshes running as clients. Right now, only host/terminal relationships are possible between the two.

Seeking good penmanship

▶ NCR will add a second pen-based product to its lineup in mid-June. The Syntex 3130 Net-based will resemble the existing Model 3125 and cost about the same, but it will improve two main flaws of its predecessor: a poor display and a tendency to break. The 3130 will add a built-in display and a more rugged, sources close to the company said. It will use a lower volt version of Intel's 80386SL. NCR refused to comment.

Seeding interoperability

▶ Apple is discussing with its larger corporate customers plans to implement cross-platform application development tools that will work with Macintosh and Windows-based PCs. The tools announcement, due this summer, will include co-branding agreements between Apple and third parties.

Novell is leaping away from what it calls an erroneous slide shown to reporters and analysts last week in Provo, Utah. The slide implied that Novell will bundle peer-to-peer networking functions into its core operating system sometime next year. A spokeswoman and Novell is moving in that direction but has not set a timetable for such development. Get any news tips? Phone, fax or Compuserve: News Editor Alan Alper at (800) 343-6474; (508) 875-8031 or 765/372,213, respectively. Or by Computerworld's 24-hour voice-mail tip line at (800) 820-8655.

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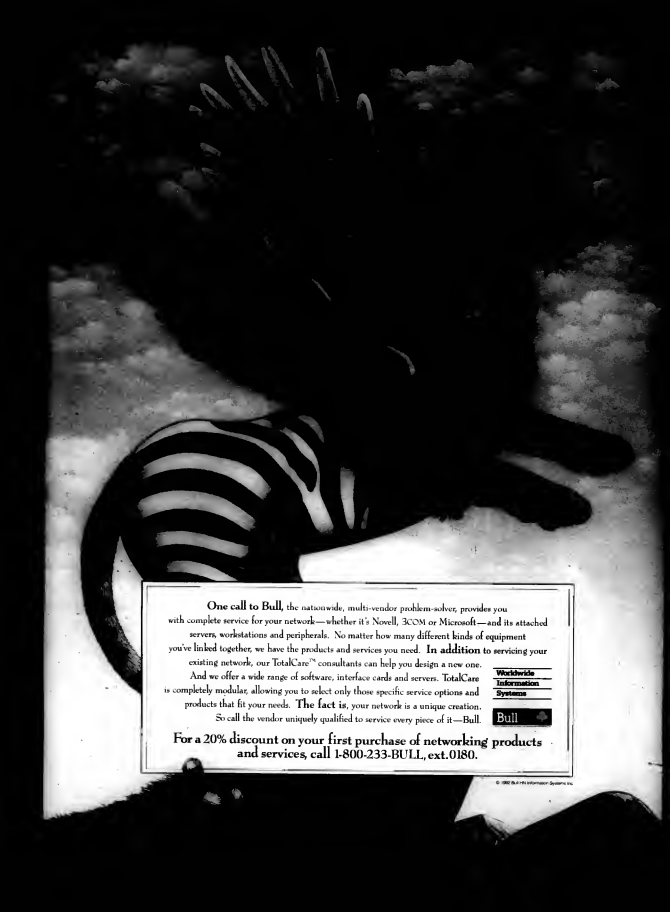
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